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BOMBAY BRANCH
OF THE
ROYAL ASIATIC SOCIETY
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THE

GENERA OF BIRDS:

COMPRISING

THEIR GENERIC CHARACTERS,

A NOTICE OF THE HABITS OF EACH GENUS,

AND

AN EXTENSIVE LIST OF SPECIES

REFERRED TO THEIR SEVERAL GENERA.

BY

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IN THREE VOLUMES.

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PATERNOSTER ROW.

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MUSEUM ZOOLOGICUM

C. Hullmandel's Patent Lithotint.

GYMNORHINA
leuconota Gould.

C. Hullmandel & Parent Lithogr.

1. PHONYGAMA viridis. 2. GYMNORHINA tibicen. 3. STREPERA graculina.

The fourth Tribe,

CONIROSTRES, or Conical-billed Birds,

have the Bill strong, more or less conical, with the tip slightly emarginated or entire, the Wings generally moderate and pointed; the Tarsi usually long and strongly scutellated; the Toes moderate, with the outer one sometimes united at its base.

The first Family,

CORVIDÆ, or Crows,

have the Bill strong, with the base of the culmen sometimes covered with projecting bristly plumes, arched, and the sides compressed to the tip, which is more or less emarginated; the nostrils basal, and more or less concealed by the basal plumes; the Wings generally long and pointed; the Tail moderate or lengthened; the Tarsi and Toes moderate.

The first Subfamily,

PHONYGAMINÆ, or Piping Crows,

have the Bill lengthened, with the base broad; the sides compressed, and the culmen broad, rounded, projecting on the forehead, and more or less straight to the tip, which is more or less emarginated; the nostrils basal, much exposed, and usually in the form of a long narrow slit in the substance of the bill; the Wings usually long and pointed, or rounded; the Tail long and even, or rounded; the Tarsi and the Toes strong, and strongly scaled, with the outer toe united at its base.

Gymnorhina.*

Bill longer than the head, broad, and elevated at the base, with the culmen slightly curved, and the sides compressed towards the tip, which is slightly curved and emarginated, the culmen advancing on the forehead, rounded, and smooth; the nostrils basal, lateral, with the opening in the form of a straight slit, pierced in the substance of the bill and exposed. *Wings* very long and pointed, with the first quill half the length of the second, which is shorter than the third and fourth; these are the longest. *Tail*

* This genus I established in 1840 (*A List of Genera of Birds*, 1st edit. p. 37.).

moderate and even. *Tarsi* robust, longer than the middle toe, and covered with broad strong scales. *Toes* moderate, with the lateral ones nearly equal; the hind toe long and robust; the claws moderate, much curved, and acute.

The species of this genus are only found in Australia, where they are seen in small parties in the cultivated places, even near the dwellings and stock yards of the colonists; but they prefer, says Mr. Gould, the cleared lands, open flats and plains, skirted by belts of trees; he also speaks highly of their musical notes. They feed chiefly on insects, for which they generally search the ground, and they devour immense numbers of locusts and grasshoppers. The nests are formed outwardly of sticks, leaves, wool, &c., and lined with fine materials. The eggs are usually three or four in number.

1. G. *tibicen* (Lath.) G. R. Gray, Gould, Syn. B. of Austr. pl. f. (head) B. of Austr. pl.
2. G. *leuconota* Gould, B. of Austr. pl. — Cracticus hypoleucus *Gould*, Syn. B. of Austr. pl. f. (head); Barita tibicen *Quoy & Less.* Voy. de l'Uranie, Ois. t. 20.
3. G. *anaphonensis* (Temm.) — Cracticus cuneicaudatus *Vieill.* Less. Compl. de Buff. t. 47. f. 1.

Strepera *Less.**

Bill longer than the head, broad at the base, the culmen elevated and rounded at the base, and slightly curved towards the tip, which is slightly emarginated; the nostrils basal, lateral, and pierced in the substance of the bill in the form of a longitudinal slit. *Wings* long and pointed, with the first quill short, and the second much shorter than the third, which is rather shorter than the fourth and fifth; these are the longest. *Tail* long and nearly square. *Tarsi* strong, longer than the middle toe, and strongly scutellated. *Toes* moderate, with the lateral ones nearly equal; the hind toe long and robust; the claws moderate, much curved, and acute.

The continent of Australia is the peculiar habitat for the species of this genus, They are, observes Mr. Gould, usually seen in small parties of four to six individuals, migrating from one part of that vast country to another in search of food. Some species chiefly seek their food on the ground, where they hop with the greatest facility; it consists of insects and larvæ. Others are more generally observed on the trees, on which they search for fruits, berries, and seeds. Their flight is usually of short duration, and consists generally of flitting from tree to tree, or from one portion of the forest to another. They possess the power of causing the forests to echo with their remarkable noisy cries. The nests are constructed on the trees of large size, built of sticks, and lined with grass. The eggs are usually three to four in number.

1. S. *graculina* (Shaw), G. R. Gray, White's Bot. Bay, pl. p. 251. — Corvus strepera *Lath.* Leach, Zool. Misc. pl. 86., Le Vaill. Ois. de Par. t. 24., Gould, B. of Austr. pl.
2. S. *fuliginosa* Gould, Proc. Z. S. 1836. p. 106., Syn. of Austr. Birds, pl. f.
3. S. *versicolor* (Lath.) Lamb. Icon. ined. i. 51. — Strepera cinerea *Gould.*

* M. Lesson established this genus in 1831 (*Traité d'Ornithologie*, p. 329.). It is coequal with *Coronica* of Mr. Gould (1837).

PHONYGAMA *Less.**

Bill the length of the head, broad at the base, with the culmen elevated and slightly advancing on the forehead, and the rest curved towards the tip, which is slightly hooked and emarginated; the nostrils placed in a sunken channel, with the opening large, oval, and partly hidden by the advancing feathers. *Wings* moderate, with the first four quills graduated, and the fifth the longest. *Tail* lengthened, broad, and rounded. *Tarsi* rather longer than the middle toe, and covered with broad scales in front. *Toes* moderate, with the lateral ones unequal, the outer the longest; the hind toe long and strong; the claws moderate, curved, and acute.

The species of this genus are inhabitants of the primeval forests of New Guinea, where they are observed perched singly on the upper branches of the large trees, the fruits of which form their principal subsistence. One of the species is said to make the forests vibrate with its various musical notes, which are clear, distinct, sonorous, and pass nearly through the whole gamut.

1. P. *viridis* (Linn.) G. R. Gray, Pl. enl. 634. — Cracticus chalybæus *Vieill.*; Chalybæus paradiseus *Cuv.* Le Vaill. Ois. de Parad. t. 10.
2. P. *Keraudrenii* Less. Voy. de la Coqu. t. 13. — Chalybæus cornutus *Cuv.*; Phonygama Lessonia *Swains.* Less. Compl. de Buff. t. 7.
3. P. *ater* Less. Voy. de la Coqu. Zool. i. 638. — Cracticus versicolor *Vieill.* ?

* It was in the *Manuel d'Ornithologie*, i. p. 141. that M. Lesson established this genus in the year 1828.

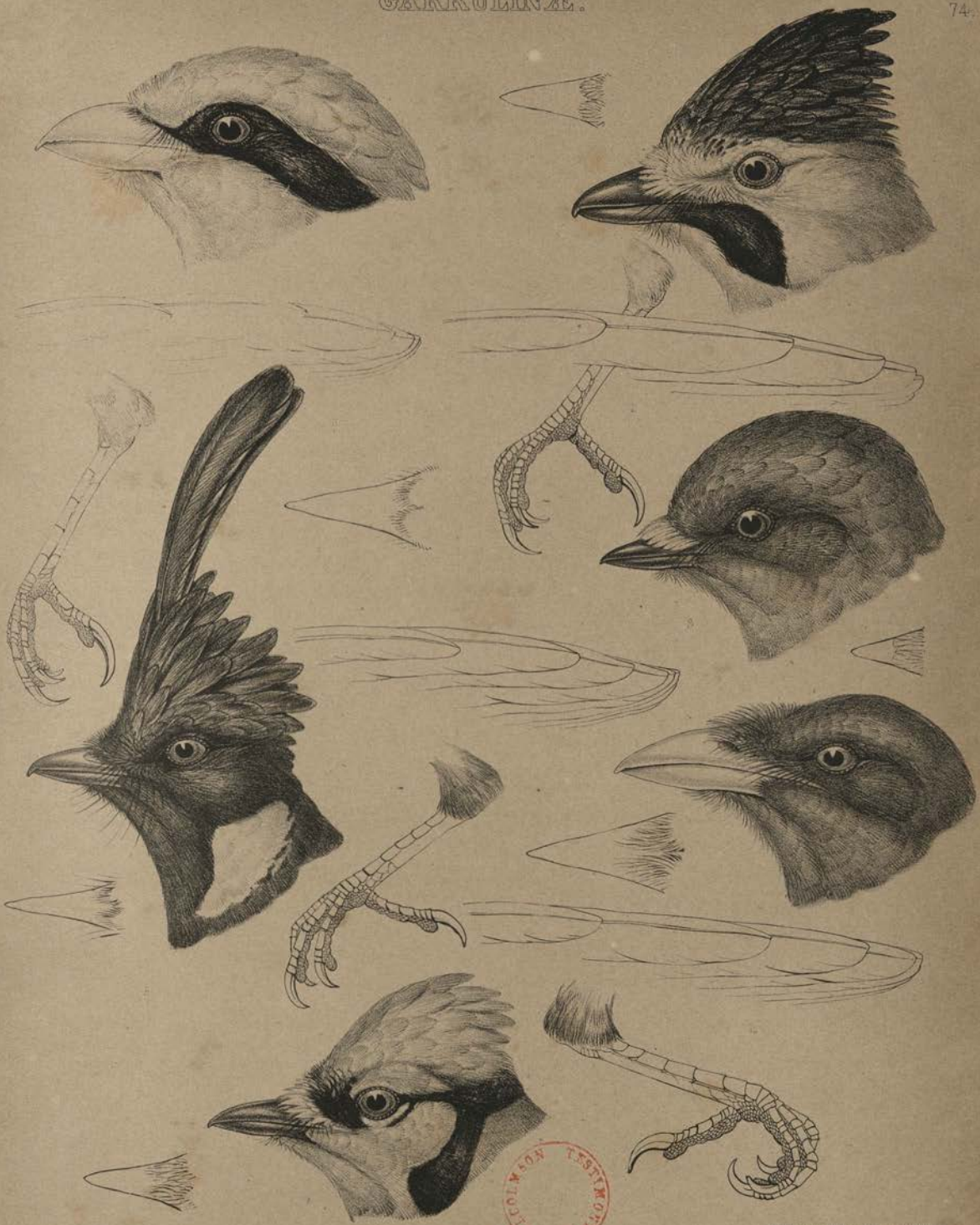
January, 1846.

C. Hullmandel's Patent Lithotint.

CYANOCORAX
armillatus G.R. Gray

Hullmandel & Walton Lithographers.

1. GARRULUS amicapillus.
2. CISSA sinensis.
3. PERISOREUS infaustus.
4. PSILORHINUS morio.
5. LOPHOCITTA galericulata.
6. CYANOCORAX cristatus.



Hullmandel & Walton Lithographers.

1. GARRULUS auricapillus.
2. CISSA sinensis.
3. PERISOREUS infaustus.
4. PSILORHINUS morio.
5. LOPHOCITTA galericulata.
6. CYANOCORAX cristatus.

The second Subfamily,

GARRULINÆ, or JAYS,

have the Bill moderate, strong, laterally compressed, and the culmen straight, but suddenly curved near the tip, which is emarginated; the Nostrils generally concealed by projecting plumes; the Wings moderate and rounded; the Tail of various length, graduated or rounded; the Tarsi moderate and much scutellated; and the Toes long and strongly scaled.

LOPHOCITTA.*

Bill moderate, much compressed on the sides, with the culmen slightly arched and elevated at the base, and the tip curved and emarginated; the gape furnished with lengthened bristles; the nostrils basal, lateral, sunk in a deep groove, with the opening oval. *Wings* moderate and rounded, with the fifth, sixth, and seventh quills nearly equal and longest. *Tail* moderate and rounded. *Tarsi* moderate, longer than the middle toe, and strongly scaled. *Toes* short, strongly scutellated, the lateral ones equal, and the hind toe and claw longer than the middle toe; the claws of all acute.

The Indian Archipelago is the habitat of the species which constitutes the type of this division. Its habits and manners are at present unknown.

L. *galericulata* (Cuv.) Le Vaill. Ois. de Par. t. 42. — Lanius scapulatus *Licht.*; Lanius coronatus *Raffl.*; Vanga cristata *Griff.* An. Kingd. 1. pl. p. 486.

GARRULUS *Briss.*†

Bill strong, shorter than the head, compressed on the sides, with the culmen nearly straight, but suddenly curved near the tip, which is slightly emarginated; the gonys equally convex with the end of the upper mandible, and ascending; the lateral margins straight; the nostrils basal, lateral, and hidden by the short bristly frontal plumes. *Wings* rounded, with the fourth, fifth, and sixth quills nearly equal and longest. *Tail* generally moderate, and nearly even at its end. *Tarsi* longer than the middle toe, and scutellated. *Toes* strong and much scutellated, with the outer toe longer than the inner; the hind toe long and strong; the claws stout and slightly curved.

The Jays are peculiar to the Old World, and are usually found in pairs or small societies in forests, or wherever trees are located together, preferring the closest and thickest parts, as they are very arboreal in their habits, hopping actively from branch to branch. It is on the trees that these birds find most of their food, which consists of various

* The above name was given by me (1840) in the place of *Platylophus* (1837) of Mr. Swainson, as the latter had been previously employed.
† Established by Brisson (*Ornithologie*) in 1760. It appears to embrace *Podoces* of M. Fischer (1823).

fruits and seeds; but they also visit cultivated grounds and orchards for the fruits and certain vegetables to which they are partial. They sometimes suck the eggs of birds in their nests; and even young birds do not escape them, especially those that are feeble and sickly, in preying upon which, they place them under their feet, and with their bills tear them to pieces, swallowing each piece separately. The imitations of quadrupeds as well as birds, which are practised by the common species, are most exact and ludicrous. Their nest is composed of sticks, lined with fibrous roots of plants, and is usually placed in the most unfrequented parts of the forest. The eggs are generally from five to six in number.

1. G. *glandarius* (Linn.) Pl. enl. 481., Gould's B. Eur. pl. 214.
2. G. *atricapillus* Geoffr. — Garrulus melanocephalus *Bonelli*, Mém. Acad. Turin, xxxvii. 298. t. 1.
3. G. *gularis* Gray, Ill. Ind. Zool. pl. — Garrulus lanceolatus *Vigors*, Proc. Z. S. 1830. 7., Gould's Cent. of Birds, pl. 39, 40.; G. Vigorsii *Gray*, Ill. Ind. Zool. pl.
4. G. *ornatus* Gray, Illustrations of Ind. Zool. pl. — Garrulus bispecularis *Vigors*, Proc. Z. S. 1830. 7., Gould's Cent. of Birds, pl. 38.
5. G. ? *Panderi* (Fisch.) Mém. de la Soc. Imp. Mosc. vi. t. 21.; Type of Podoces *Fischer* (1823).

Perisoreus *Pr. Bonap.**

Bill short, with the base broad, the sides compressed, the culmen sloping to the tip which is slightly curved and emarginated, and the gonys rounded and ascending; the nostrils basal, lateral, and hidden by the projecting basal plumes. *Wings* moderate, rounded, with the fourth, fifth, and sixth quills the longest. *Tail* moderate and rounded. *Tarsi* longer than the middle toe and scutellated. *Toes* moderate, with the outer toe longer than the inner: the hind toe long, and armed with a slightly curved claw.

These birds inhabit the woods and forests of the most northern parts of Europe and North America, migrating to the south in very severe winters, but usually returning on the first appearance of more genial weather. The American species is generally seen in pairs or in small societies, in the most solitary and pathless forests, flitting leisurely from branch to branch, and sometimes on the ground, keeping up a kind of low chattering with its fellows. They feed on black moss, worms, and even flesh; and are bold, entering habitations, and stealing whatever they can carry off. They lay up for winter's use hoards of their usual food, in hollow places or between the layers of the bark of decayed trees. The nest is built in pine trees, formed of sticks and grass, and they lay from two to three eggs.

1. P. *infaustus* (Linn.) Pr. Bonap. Sparr. Mus. Carls. t. 76. — Corvus sibiricus *Bodd.* Pl. enl. 608., Le Vaill. Ois. de Parad. t. 47.; C. russicus *Gmel.* Gould's Birds of Europe pl. 215.; C. mimus *Pall.*
2. P. *canadensis* (Linn.) Pr. Bonap. Pl. enl. 530., Wils. Amer. Orn. pl. 21. f. 1. — Garrulus fuscus *Vieill.*; Pica nuchalis *Wagl.*; Coracias mexicanus *Temm.*; Garrulus brachyrhynchus *Swains.* Faun. Bor. Amer. pl. 55., Audub. B. of Amer. pl. 107.
3. P. *ferrugineus* (Bechst.) Le Vaill. Ois. Par. t. 48. — Corvus canadensis *Licht.* ?

Cyanocorax *Boie.*†

Bill moderate, slightly compressed on the sides, with the culmen slightly curved from the base to the tip, which is scarcely emarginated; the gonys gradually curved upwards toward the tip; the lateral margins slightly curved; the nostrils basal, lateral, and partly hidden by the projecting frontal plumes.

* Established by the Prince of Canino (*Sagg. Distr. Nat. Anim. Vert.* p. 43.) in 1831, and in the same year Mr. Swainson proposed *Dysornithia* for the same birds.

† This genus was established by M. Boie (*Isis*) in 1826. In 1831, Mr. Swainson gave this division the name of *Cyanurus*.

Wings rounded, with the fourth, fifth, and sixth quills the longest. *Tail* lengthened and rounded. *Tarsi* moderate, longer than the middle toe. *Toes* strong, with the lateral ones equal; the hind toe long and strong; the claws strong and curved.

The New World is the peculiar abode of these showy birds, where they live in societies in the forests, being rarely seen in the open plains, and are very active, hopping from branch to branch in search of their food, which consists of seeds, insects, and eggs of birds. Sometimes they seek the cultivated tracts of land, to plunder them of the fruits, &c. Like the common Jay they attack and devour young birds. The manners of the typical species are bold and tyrannical, and they possess great talent for mimicry, copying the notes and cries of quadrupeds and birds with equal facility. This species also forms hoards of food for the winter season. Their nests are placed in shady trees, usually of large dimensions; they are formed of twigs, and lined interiorly with dry fibrous roots, &c. The female generally deposits from four to six eggs.

1, C. *cristatus* (Linn.) Boie, Pl. enl. 529., Audub. Birds of Amer. pl. 102., *Wils.* Amer. Orn. pl. 1. f. 1., Le Vaill. Ois. de Par. t. 45.

2. C. *Stelleri* (Gmel.) Pr. Bonap. Amer. Orn. pl. 13. f. 1., Faun. Bor. Amer. Birds, pl. 54., Audub. B. of Amer. pl. 362. f. 2.

3. C. *coronatus* (Swains.) Phil. Mag. 1827. p. 437., Jard. & Selby's Orn. pl. 64.

4. C. *melanogaster* (Vieill.) N. Dict. d'Hist. Nat. xii. 478., Le Vaill. Ois. de Par. t. 44. — Pica cyanochlora *Wagl.*

5. C. *cyanoleucus* (Pr. Max.) Pl. col. 193. — Corvus splendidus *Licht.*; C. cristatellus *Temm.*; C. tricolor *Mikan.*

6. C. *pileatus* (Temm.) Pl. col. 58. — Pica chrysops *Vieill.* Azara No. 53.

7. C. *cayanus* (Linn.) Pl. enl. 373. — Pica albicapilla *Vieill.*; P. larvata *Wagl.*

8. C. *cyanopogon* (Pr. Max.) Pl. col. 169.

9. C. *Yucas* (Bodd.) Pl. enl. 625.—Corvus peruvianus *Gmel.* Le Vaill. Ois. de Par. t. 46.; Pica chloronotos *Wagl.*; Garrulus luxuosus *Less.*

10. C. *viridicyanus* (D'Orb. & Lafr.) Voy. dans l'Amér. Mérid. Ois. t. 53. f. 1.

11. C. *sanblasianus* (Lafr.) Mag. de Zool. 1843. t. 28., Neboux, Rev. Zool. 1840. p. 290.

12. C. *azureus* (Temm.) Pl. col. 168. — Pica cærulea *Vieill.* Azara No. 55.

13. C. *Beecheii* (Vigors), Zool. Journ. iv. 353., Zool. of Beechey's Voy. p. 22. pl. 6., Mag. de Zool. 1837. Ois. t. 72.

14. C. *ultramarinus* (Pr. Bonap.) Am. Orn. ii. p. 62., Pl. col. 439. — Garrulus sordidus *Swains.* Zool. Ill. n. s. pl. 86., Audub. B. of Amer. pl. 362. f. 3.; G. californicus *Vigors*, Zool. of Beechey's Voy. pl. 5.

15. C. *cærulescens* (Vieill.) N. Dict. d'Hist. Nat. xii. p. 480. — Corvus floridanus *Say*, Journ. Philad. 1. 347., Pr. Bonap. Amer. Orn. pl. 14. f. 1.; Garrulus cyaneus *Vieill.*, Audub. B. of Amer. pl. 87.

16. C. *mystacalis* (G. S.) Mag. de Zool. 1835. Ois. t. 34.

17. C. *cyanomelas* (Vieill.) N. Dict. d'Hist. Nat. xii. p. 127. Azara No. 54. — Pica cyanomelana *Wagl.*

18. C. *Sieberii* (Wagl.) Syst. Avium, Pica sp. 23.

19. C. *ornata* (Less.) Rev. Zool. 1839. p. 41.

20. C. *melanocyaneus* Hartl. Rev. Zool. 1844. 215.

21. C. *armillatus* G. R. Gray.

Psilorhinus *Rüpp.**

Bill strong, long, with the culmen curved to the tip, which is unemarginated; the sides compressed, the lateral margins slightly curved, and the gonys long and ascending; the nostrils basal, lateral, rounded, partly closed by a membrane, and the opening slightly concealed by a few slender plumes. *Wings* long, with the third, fourth, and fifth quills the longest. *Tail* lengthened, and more or less graduated. *Tarsi* strong, longer than the middle toe, and scutellated. *Toes* long, the lateral ones unequal; the hind toe long and strong; all the claws curved and acute.

These fine birds are found in Columbia, Mexico, and the continent of India. The Asiatic species inhabits the forests, and is often observed flitting from branch to branch in search of food. It has been recorded that one kept in captivity ferociously pounced upon living birds, and eagerly devoured them, and that it refused other kinds of food.

* This division was originally established by Dr. Rüppell, under the above name, in 1837. In 1838, the Prince of Canino employed the name of *Cyanurus;* but, that word having previously been used by Mr. Swainson, I had in 1841 proposed in its place *Calocitta.*

1. P. *morio* (Licht.) Mus. Senck. 1837. t. 4. f. 3. — Pica fuliginosa *Less.*; Psilorhinus mexicanus *Rüpp.*

2. P. *Bullockii* (Wagl.) — Pica formosa *Swains.*; Garrulus Burnettii *Gray*; Pica Collicii *Vigors*, Zool. of Beechey's Voy. pl.; G. ultramarinus *Audub.* B. of Amer. pl. 96.

3. P. *gubernatrix* (Temm.) Pl. col. 436.

4. P. *sinensis* (Linn.) Pl. enl. 622. — Corvus erythrorhynchus *Bodd.* Le Vaill. Ois. d'Afr. t. 57., Gould's Cent. of B. pl. 41.; Coracias melanocephala *Lath.*

Cissa *Boie.**

Bill strong, large, with the culmen elevated and curved to the tip, which is emarginated and hooked; the sides much compressed, the lateral margins nearly straight, and the gonys long and ascending; the nostrils basal, lateral, rounded, and partly covered by the frontal plumes. *Wings* moderate and rounded, with the first four quills graduated, and the fourth and fifth the longest. *Tail* more or less lengthened and graduated. *Tarsi* longer than the middle toe, moderately strong, and scaled. *Toes* long, strong, and much scutellated, with the inner scarcely shorter than the outer; all the claws long, strong, and curved.

These birds inhabit the Indian continent and its archipelago; but their habits and manners have not yet been recorded.

1. C. *sinensis* (Bodd.) Pl. enl. 620. — Corvus speciosus *Shaw*; Corapica bengalensis *Less.*; Kitta venatoria *Gray*, Ill. Ind. Zool. i. pl. 24.

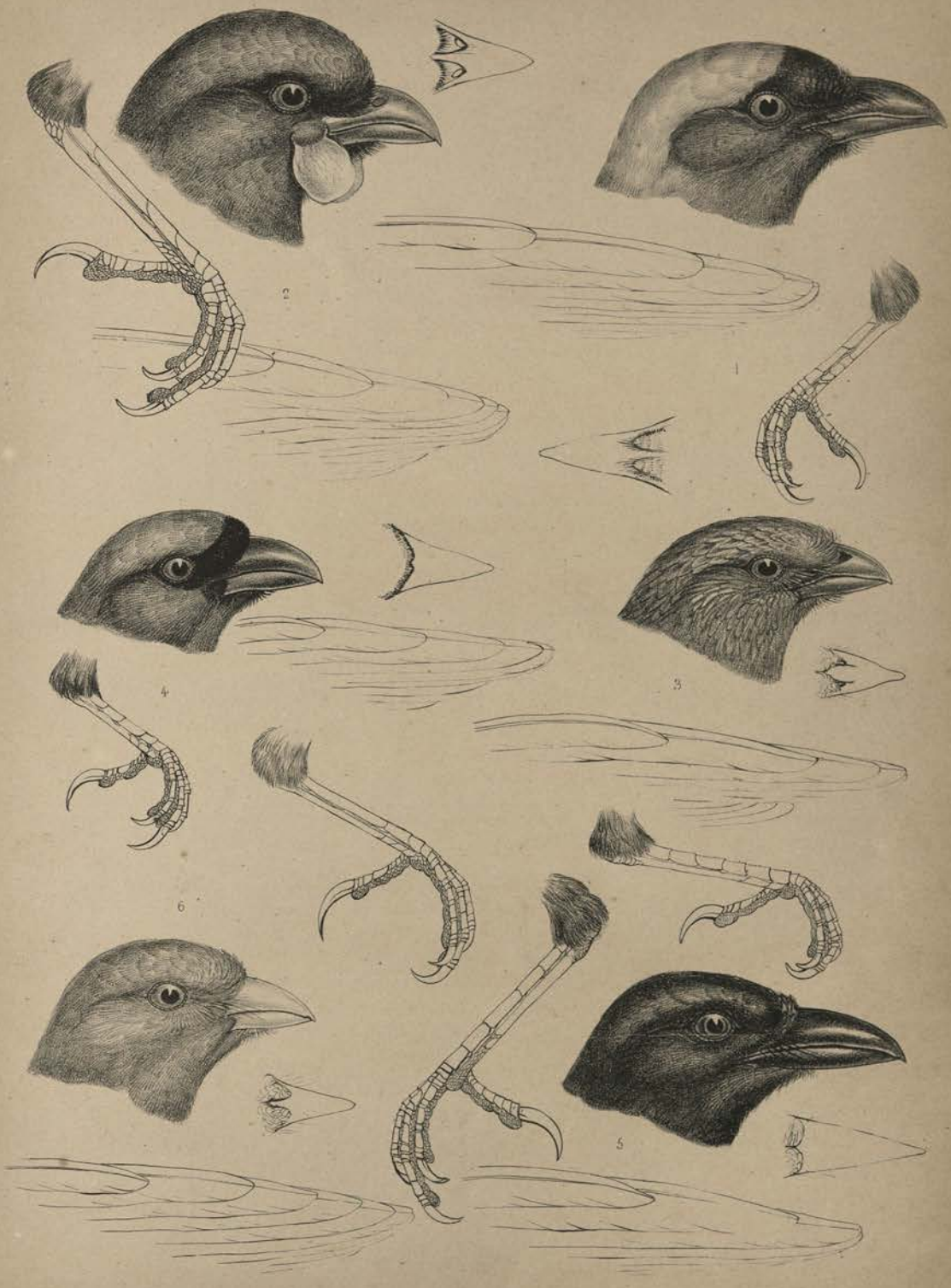
2. C. *thalassina* (Temm.) Pl. col. 401.

* Established by M. Boie (1826) in the *Isis*. *Corapica* of M. Lesson (1831), and *Chlorisoma* of Mr. Swainson (1837), are coequal with the name adopted.

March, 1845.

C.Bullmandel's Patent Lithotint.

DENDROCITTA
frontalis M^c^Clell.



Bullmandel & Walton Lithographers

1 TEMNURUS senensis. 2 CALLÆAS cinerea. 3 STRUTHIDEA cinerea.
4 CRYPSIRINA varians. 5 PTILOSTOMUS senegalensis. 6 CONOSTOMA æmodium.

The third Subfamily,

CALLÆATINÆ, or TREE-CROWS,

have the Bill short, with the culmen elevated at the base, and much curved to the tip; the sides compressed, and the gonys long and straight; the Wings short and rounded; the Tail lengthened and graduated; the Tarsi more or less long, and covered in front with broad scales; the Toes moderate, with the lateral ones unequal.

CALLÆAS *Forst.**

Bill short, strong, with the culmen elevated at the base, and suddenly curved from the base to the tip, which is entire; the sides compressed, and the gonys lengthened and slightly arched; the nostrils basal, lateral, pierced in a membranous channel, and the opening partly concealed by the frontal plumes. *Wings* short and rounded, with the sixth and seventh quills equal and longest. *Tail* moderately long, and rounded, with the shaft of each feather ending in a bristly point. *Tarsi* long, longer than the middle toe, and strongly scutellated in front with one lengthened scale. *Toes* moderate, the lateral ones unequal, and free at their base, the outer toe the longest; the hind toe very long and strong, and all armed with strong curved claws.

This bird is found in both the islands of New Zealand, where it is usually seen walking about on the ground searching for the larvæ or grubs of insects, and is occasionally observed on trees of various kinds, for the purpose of obtaining their fruits and berries. It is also said to devour young birds.

C. *cinerea* Forst. Desc. p. 74., Icones ined. 52., Daud. Orn. t. 21., Vieill. Gal. des Ois. t. 93., Voy. de l'Astrol. Ois. t. 15. — Glaucopis cinerea *Gmel.*

STRUTHIDEA *Gould.*†

Bill short, with the culmen elevated at the base, advancing on the forehead, where it is rounded, and much curved to the tip, which is entire; the lateral margin curved, and the gonys ascending; the

* Forster established this genus in 1788 (*Enchiridion Hist. Nat. Inser.* p. 35.). In the same year Gmelin gave the name of *Glaucopis* to the same type.

† It was in 1836 that Mr. Gould established this genus (*Proc. Zool. Soc.* 1836, p. 143.). In 1837 Mr. Swainson proposed the name of *Brachystoma* for the same bird.

nostrils basal, lateral, rounded, and exposed. *Wings* moderate and rounded, with the fourth, fifth, and sixth quills the longest. *Tail* moderate and rounded, with the end of each feather broad and rounded. *Tarsi* strong, longer than the middle toe, and covered in front with broad strong scales. *Toes* long, strong, the outer longer than the inner ; the claws strong, compressed, and much curved.

Mr. Gould informs us that this bird is confined to the south-eastern portion of the Australian continent, and that it inhabits the pine ridges bordering the extensive plains of the Upper and Lower Namoi. It lives in small companies of three or four together on the topmost branches of the trees, and is extremely quick and restless, the whole company leaping from branch to branch in rapid succession, at the same time throwing up and expanding their tails and wings ; these actions are generally accompanied with a harsh unpleasant note. Its food consists of insects and probably berries.

S. *cinerea* Gould, Syn. of Austr. Birds, p. ., B. of Austr. pl.

Temnurus *Less.**

Bill nearly as long as the head, with the culmen elevated at the base, and curved to the tip, which is slightly emarginated ; the sides compressed ; the gonys of the lower mandible lengthened and nearly straight ; the nostrils basal, lateral, small, rounded, and hidden by the frontal plumes and short bristles. *Wings* long and rounded, with the first three quills graduated, and the fourth, fifth, and sixth the longest. *Tail* more or less lengthened and graduated. *Tarsi* short, rather longer than the middle toe, and covered in front with very broad scales. *Toes* short, and strongly scutellated, the outer toe longer than the inner one ; the hind toe long and strong ; the claws long, curved, and acute.

It is in various parts of the Indian continent that the species of this genus are found. They are generally seen single or in pairs, though sometimes noticed in small parties of four or five individuals together, in the jungly districts or in the neighbourhood of well-wooded villages. Their peculiar metallic or harsh rattling cries discover them even in the thick foliage of the jungles. Fruits and berries of different kinds form their principal subsistence, especially that of the banyan.

1. T. *leucopterus* (Drap.) Dict. Class. Hist. Nat. vii. p. 370., Pl. col. 265.
2. T. *truncatus* Less. — Glaucopis temnurus *Temm.* Pl. col. 337.
3. T. *aterrimus* (Temm.) Pl col.
4. T. *rufus* (Scop.) Hartl. Sonn. Voy. Ind. ii. t. 106., Le Vaill. Ois. d'Afr. t. 59. — Pica rufiventris *Vieill.*
5. T. *vagabundus* (Lath.) Gould, Cent. of B. pl. 42.
6. T. *occipitalis* (Müll.) Hartl. Tydsch. Naturl. Geschied. 1835. p. 343. t. 5. — Dendrocitta rufigaster *Gould*, Proc. Z. S. 1837. p. 80.
7. T. *sinensis* (Gray), Ill. Ind. Zool. pl., Gould's Cent. of B. pl. 43.
8. T. *leucogaster* Gould, Proc. Z. S. 1838. p. 37., Trans. Zool. Soc. pl. xii.
9. T. *frontalis* Mc Clell. & Horsf. Proc. Z. S. 1839. p. 163.
10. T. *? altirostris* Blyth, Journ. A. S. B. 1843. p. 932.

Crypsirina *Vieill.*†

Bill moderate, smooth, with the culmen arched from the base to the tip, which is notched; the sides rather compressed ; the gonys long and advancing upwards; the base of the culmen, and the

* Established by M. Lesson in 1831. *Dendrocitta* (1833) of Mr. Gould is coequal.
† Established by Vieillot in 1816 (*Analyse*, p. 36.). In 1817 Cuvier proposed *Temia*, and in 1820 Dr. Horsfield gave the name of *Phrenothrix* for the same type. In 1827 Wagler altered Vieillot's name to *Crypsirhina*.

nostrils entirely hidden by the basal velvety plumes. *Wings* moderate and rounded, with the fifth and sixth quills the longest. *Tail* lengthened and graduated, with the ends of the feathers widening and obtuse. *Tarsi* longer than the middle toe, and covered with broad scales. *Toes* long, with the lateral toes unequal, the outer toe the longest; the hind toe long and strong; the claws long, curved, and acute.

The typical species of this genus frequents, in small flocks, the open places or the skirts of the forests of India and its isles. It prefers the localities recently cleared for cultivation, as in such places it easily procures an abundant supply of various kinds of insects. Its flight is heavy and slow, generally performed only for a short distance from tree to tree in search of fruits and berries, at the same time uttering a harsh rather melancholy cry. If disturbed, it usually hides itself in thick foliage until the cause of alarm has disappeared.

C. *varia* (Lath.) Vieill. Gal. des Ois. t. 100. — Phrenothrix temia *Horsf.* Zool. Res. in Java, pl. 7.; Corvus caudatus *Shaw*, Nat. Misc. pl. 561.; C. temia *Daud.* Le Vaill. Ois. d'Afr. t. 56.

Ptilostomus *Swains.**

Bill long, smooth, with the culmen at the base elevated and curved to the tip; the sides compressed, the lateral margins rather curved, and the gonys of the lower mandible long and straight; the nostrils basal, lateral, rounded, and concealed by the frontal plumes. *Wings* long, with the first quill half the length of the third; this latter, with the fourth and fifth, the longest. *Tail* lengthened, much graduated, and the end of each feather acute. *Tarsi* long, much longer than the middle toe, and covered in front with broad scales. *Toes* moderate, strongly scaled, with the outer toe shorter than the inner, and united at the base; the claws long, strong, and curved.

The continent of Africa is the peculiar country of the birds that compose this genus. They are seen in flocks of about twenty individuals together, perched on the upper branches of the lofty trees. Their food consists of fruits and insects. The nest is usually built on the tops of the highest trees, and is defended with thorns, leaving only an opening on one side.

1. P. *senegalensis* (Linn.) Pl. enl. 538. — Corvus ater *Linn.*; Coracias nigra *Lath.*; Corvus piapiac *Daud.* Le Vaill. Ois. d'Afr. t. 54.

2. ? P. *poicilorhynchus* (Wagl.) Syst. Av. sp. 2.

3. P. *rufigaster* (Lath.) Le Vaill. Ois. d'Afr. t. 55. — Corvus octopennatus *Daud.*; C. ventralis *Shaw.*

Conostoma *Hodgs.*†

Bill short, with the culmen and lateral margins equally curved to the tip, which is obtuse and entire; the sides much compressed; the nostrils rounded, with the opening surrounded by a membrane and

* Established by Mr. Swainson in 1837 (*Class of Birds*, ii. p. 266.).
† Established by Mr. Hodgson in 1842 (*Journ. As. Soc. Beng.* 1841, p. 857.).

concealed by the incumbent frontal plumes. *Wings* short, weak, rounded, with the sixth, seventh, and eighth quills nearly equal and longest. *Tail* rather lengthened and rounded. *Tarsi* longer than the middle toe, and covered with broad scales in front. *Toes* long, united at the base, and the outer toe as long as the inner one; the hind toe longer than the outer one, and depressed; the claws large, and rather curved and acute.

This type is found on the high mountains of Northern India, close to the ridge of perpetual snow.

C. *æmodius* Hodgs. Journ. As. Soc. Beng. 1841. p. 857. pl.

December, 1845.

C.Hullmandel's Patent Lithotint.

CORVUS
dauricus Pall

Wolf del. et lith. Printed by Hullmandel & Walton

1. PICA mauritanica. 2. CORVUS frugilegus. 3. GYMNOCORVUS senex. 4. NUCIFRAGA caryocatactes. 5. PICATHARTES gymnocephalus.

The fourth Subfamily,

CORVINÆ, or CROWS,

have the Bill of various lengths, the base broad, and the sides compressed, with the culmen more or less curved to the tip, which is usually entire; the nostrils entirely concealed by the projecting frontal plumes, except when the head or cheeks are denuded of feathers; the Wings long and slightly rounded; the Tail long and graduated, or moderate and nearly equal; the Tarsi lengthened, and covered in front with broad scales; the Toes moderate, strong, and the lateral ones of equal length.

NUCIFRAGA *Briss.**

Bill longer than the head, and strong, with the culmen elevated at the base, and sloping to the tip, which is entire; the lateral margins straight, but with the base angulated; the gonys very long and ascending; the nostrils basal, lateral, and covered by the frontal bristles. *Wings* long and rounded, with the fourth and fifth quills longest. *Tail* moderate, and rounded on the sides. *Tarsi* longer than the middle toe, and covered in front with broad scales. *Toes* long, strong, and strongly scutellated; the outer toe rather shorter than the inner, and united at the base; the claws long, curved, and acute.

It is in the woods and forests of the mountainous parts of Europe and Asia that these birds are usually noticed in pairs, though they are sometimes observed in large flocks; and in some portions of Europe they migrate according to the seasons. Larvæ and perfect insects form the chief portion of their subsistence; these they obtain from the trunks of trees, which they are capable of ascending in the same manner as the woodpeckers. Seeds of fir trees and nuts are also a part of their food; these they break and extract by repeated strokes of their bills. They select for a nest a hole in a decayed tree; and, if it is not sufficiently large for their purpose, they increase its size by means of their bills. The eggs are usually deposited therein to the number of five or six.

1. N. *caryocatactes* (Linn.) Briss. Pl. enl. 50. — Corvus nucifraga *Nils.*; N. guttata *Vieill.* Gould, B. of Eur. pl.

2. N. *hemispila* Vigors, Proc. Z. S. 1830. p. 8., Gould, Cent. pl.

* Brisson established this genus in 1760 (*Ornithologie*). *Caryocatactes* of Cuvier (1817) is coequal.

Pica *Briss.**

Bill long and strong, with the culmen curved, and the sides compressed to the tip, which is hooked and slightly emarginated; the lateral margins slightly curved, and the gonys long and ascending; the nostrils basal, lateral, rounded, and concealed by the projecting bristles. *Wings* long and rounded, with the first quill very short, and the fourth and fifth nearly equal and longest. *Tail* lengthened and much graduated. *Tarsi* much longer than the middle toe, strong, and covered in front with broad scales. *Toes* short, strong, the lateral toes nearly equal, and the outer one united at its base; the hind toe long and strong; the claws long, curved, and acute.

The species of this genus are found both in the Old World and in the northern parts of the New. They are generally noticed in pairs, though sometimes they congregate in flocks, when they are very noisy and querulous, and continually flying from place to place. These birds feed on all kinds of vegetables, grain, worms, and insects, and even carrion; they are very destructive to gardens and orchards, they also devour great numbers of eggs, and the young of birds, and they may occasionally be observed on the backs of the cattle, examining their hides for the larvæ of insects that infest them. When alarmed, they commence a series of chattering notes which give warning also to other birds. They place their nest usually among the highest branches of the tall trees, or in the thickest or thorny bushes. It is large and composed exteriorly of sticks and dry weeds, which are cemented together by a thick plastering of clay; the interior is lined with wool, cow-hairs, and feathers. The nest is surmounted, or roofed, with a series of thorny twigs, closely laced together, leaving only a narrow entrance on one side for the ingress and egress of the birds.

1. P. *caudata* Ray, Pl. enl. 488. — Corvus pica *Linn.*; Pica melanoleuca et P. albiventer *Vieill.*; P. europæa *Cuv.* Gould, B. of Eur. pl. 216.
2. P. *sericea* Gould, Proc. Z. S. 1845. p. 48.
3. P. *Bottanensis* De Less. Rev. Zool. 1840. p. 100. — Pica megaloptera *Blyth.*
4. P. *hudsonica* (Sabine), Pr. Bonap. — Corvus pica *Wils.* Amer. Orn. pl. 35. f. 2., Audub. B. of Amer. pl. 357.
5. P. *Nuttalli* Audub. B. of Amer. pl. 362. f. 1.
6. P. *caledonica* (Gmel.) — Corvus cinereus *Forst.* Desc. Anim. p. 260., Icon. ined. 58.
7. P. *cyanea* (Pall.) Wagl. Le Vaill. Ois. d'Afr. t. 58., Gould, B. of Eur. pl. 217.
8. P. *albicollis* Vieill. — Corvus caledonicus *Lath.* Ind. Ord. Suppl. xxv., Entrec. Voy. ii. t. 35.

Corvus *Linn.*†

Bill strong, generally long, with the culmen more or less arched, or nearly straight to the tip, which is entire; the sides gradually compressed from the base; the gonys long, more or less advancing upward to the tip; the nostrils basal, lateral, rounded, and entirely covered by the projecting bristly plumes. *Wings* long and pointed, with the first quill shorter than the second, and the third and fourth quills the longest. *Tail* moderate, sometimes equal or rounded. *Tarsi* longer than the middle toe, and broadly scutellated in front. *Toes* moderate, strong, the outer toe slightly united at the base, and the lateral ones nearly equal; the claws strong, moderate, and curved.

* Established by Brisson (*Ornithologie*) in 1760.

† Linnæus established this genus in 1735. It embraces *Lycos* of M. Boie (1826) (with which *Monedula* of M. Brehm (1828), and *Colæus* of Dr. Kaup (1829) are synonymous), *Corone* of Dr. Kaup (1829), and *Frugilegus* and *Corvultur* of M. Lesson.

These birds are found in most parts of the globe. Some remain stationary within a certain district, while others migrate from place to place on the change of season. They are generally observed in flocks, in cultivated places, seeking carrion, or worms, grubs, caterpillars, small animals, and the eggs and young of birds, which they destroy in great numbers. Some species are more commonly noticed on the sea shore searching for dead fish, which the waves continually cast up; in such places they also find shell-fish, which they carry high into the air, and drop on the rocks in order to break the shells. They are extremely fond of all kinds of cultivated vegetables, to which they are very destructive. Their cries are hoarse and discordant, especially during their first flight in the morning before they scatter themselves into smaller flocks in search of their food; and again on their reassembling in the evening, and while each pair are selecting their separate roosting-places. The nest is generally built in society, on the topmost branches of the lofty trees; it is composed outwardly of sticks, moss, and small pieces of bark cemented together with moist earth; and the interior is usually lined with horse-hair and some wool, whereon the female deposits four eggs.

1. C. *corax* Linn. Pl. enl. 495. — Corvus maximus *Scop.* Gould, B. of Eur. pl. 220.; C. clericus *Sparrm.* Mus. Carls. t. 2., Wils. Am. Orn. pl. 75. f. 3., Audub. B. of Amer. pl. 101.

2. ? C. *leucognaphalus* Daud. Tr. d'Orn. ii. p. 231.

3. ? C. *leucophæus* Vieill. N. Dict. d'Hist. Nat. viii. p. 27., Gal. des Ois. t. 100. — Corvus borealis albus *Briss.* App. vi. p. 33. t. 2. f. 1.; C. leucomelas *Wagl.*

4. C. *major* Vieill. N. Dict. d'Hist. Nat. viii. p. 27., Le Vaill. Ois. d'Afr. t. 51. — Corvus corax *Daud.*; C. montanus *Temm.*

5. C. *cacalotl* Wagl. Isis, 1831. p. 527. — Corvus splendens *Gould*; C. nobilis *Gould*, Proc. Z. S. 1837. p. 79.; C. vociferus *Cabot.*?

6. C. *macrorhynchus* Temm. Gray, Ill. Ind. Zool. ii. pl. 36. f. 2.— Corvus corax *Raffl.*; C. culminatus *Sykes.*

7. C. *corone* Linn. Pl. enl. 483., Gould, B. of Eur. pl. 221., Wils. Amer. Orn. pl. 35. f. 3. — Corvus americanus *Audub.* B. of Amer. pl. 156.; Type of Corone *Kaup* (1829).

8. C. *affinis* Rüpp. Faun. Abyss. t. 10. f. 2.

9. C. *australis* Gmel. — Fregilus enca *Horsf.*?

10. C. *coroneoïdes* Vig. & Horsf. Linn. Trans. xiii. p. 261.

11. C. *ossifragus* Wils. Amer. Orn. pl. 37. f. 2. Audub. B. of Amer. pl. 145.

12. C. *nasicus* Temm. Pl. col. 413.

13. C. *frugilegus* Linn. Pl. enl. 484. — Corvus corone *Linn.* Gould, B. of Eur. pl. 224.; Type of Frugilegus *Less.*

14. ? C. *pastinator* Gould, Proc. Z. S. 1845. p.

15. C. *capensis* Licht. Le Vaill. Ois. d'Afr. t. 52. — Corvus segetum *Temm.*; C. macropterus *Wagl.*; C. Le Vaillantii *Less.* Rüpp. Faun. t. 10. f. 3.

16. C. *monedula* Linn. Pl. enl. 523., Gould, B. of Eur. pl. 223. — Monedula turrium *Br.*; Type of Lycos *Boie* (1826).

17. C. *spermologus* Vieill. N. Dict. d'Hist. Nat. viii. p. 40., Frisch. Av. t. 68., Pl. enl. 522. — Monedula nigra *Briss.*

18. C. *cornix* Linn. Pl. enl. 76., Gould, B. of Eur. pl. 222.

19. C. *splendens* Vieill. N. Dict. d'Hist. Nat. viii. p. 44., Pl. col. 425.

20. C. *columbianus* Wils. Amer. Orn. pl. 20. f. 2., Audub. B. of Amer. pl. 362. f. 45.

21. C. *dauricus* Pall. It. iii. p. 694., Lath. Syn. of B. i. pl. 15.— C. capitalis *Wagl.*; C. pectoralis *Gould.*

22. C. *scapulatus* Daud. Tr. d'Orn. ii. p. 232., Pl. enl. 327., Le Vaill. Ois. d'Afr. t. 53.

23. ? C. *leuconotus* Swains. B. of W. Afr. pl. 5.

24. ? C. *curvirostris* Gould, Proc. Z. S. 1836. p. 18.

25. C. *cafer* Licht. — Corvus albicollis *Lath.*, *Daud.*; C. vulturinus *Shaw*, Le Vaill. Ois. d'Afr. t. 50.; Corvus crassirostris *Rüpp.* Faun. t. 8.; Type of Corvultur *Less.* (1831).

Gymnocorvus *Less.**

Bill strong, with the culmen slightly arched to the tip, which is entire; the sides compressed from the base, the lateral margins curved, and the gonys short and ascending; the nostrils lateral, with the opening large, rounded, and exposed. *Wings* long and pointed, with the third quill the longest. *Tail* long, and rounded at its end. *Tarsi* moderate, and covered with broad scales. *Toes* moderate and strong.

It is in New Guinea that the bird which constitutes this genus was found.

G. *senex* (Garn.) — Corvus tristis *Less.* Voy. de la Coqu. t. 24.

* Established by M. Lesson (*Tr. d'Ornith.* p. 327.) in 1831.

PICATHARTES *Less.**

Bill as long as the head, rather depressed, broad at the base, with the culmen curved, and the sides compressed to the tip, which is entire; the lateral margins nearly straight; the gonys short, and advancing upwards; the nostrils placed anteriorly in a large membranous groove, exposed and rounded. *Wings* reaching beyond the base of the tail, and rounded, with the sixth and seventh quills equal and longest. *Tail* very long and rounded. *Tarsi* very long and rather slender, with broad scales covering the front. *Toes* moderate, with the lateral toes nearly equal, and the outer united at the base to near the first joint of the middle toe; the hind toe moderate and strong. The upper part and sides of the head entirely denuded of feathers, and even of down.

The type of this genus is peculiar to the interior of Africa. Its habits and manners are unknown.

P. *gymnocephalus* (Temm.) Less. Pl. col. 227.

* This genus was originally proposed by Wagler in 1827, under the name of *Galgulum*, which word having been previously used, I have adopted that which was established by M. Lesson (*Traité d'Ornithologie*, p. 330.) in 1831.

May, 1846.

AUCTORUM

Bullmanstel & Walton Lithographers

CORACINA
cervicocensis De Lafr

Wolf del et lith. Printed by Hullmandel & Walton

1. GYMNODERUS fœtidus. 2. PYRODERUS scutatus. 3. CEPHALOPTERUS ornatus. 4. GYMNOCEPHALUS calvus

The fifth Subfamily,

GYMNODERINÆ, or FRUIT-CROWS,

have the Bill strong, rather depressed and straight, with the culmen curved, and the sides compressed to the tip, which is emarginated; the Nostrils lateral and placed in a membranous groove: the Wings long, and rather pointed: the Tail moderate and rounded: the Tarsi more or less long, and covered in front with transverse scales: the Toes rather long, with the outer toe nearly as long the middle toe: the Claws long, curved, and acute.

PYRODERUS.*

Bill strong, and rather long, with the culmen gradually curved, and the sides much compressed to the tip, which is emarginated and slightly hooked; the gonys long and ascending; the gape furnished with short bristles; the nostrils lateral, with the opening rounded, and hidden by the short projecting feathers, which entirely cover the base of the culmen. *Wings* long, with the fourth and fifth quills equal and longest. *Tail* moderate, and rounded on the sides. *Tarsi* short and broad, scutellated in front. *Toes* long, and rather slender; the outer toe nearly as long as the middle one, and rather united at its base; the inner rather short and free; the hind toe long and rather strong; the claws long, compressed, and curved.

The species are found in the northern parts of South America, where they inhabit the forests, and are noticed leaping from branch to branch in search of fruits and insects. They emigrate from place to place in search of their food, and are very restless and mischievous, but, if observed, they conceal themselves among the foliage of trees.

1. P. *scutatus* (Shaw), Temm. Pl. col. 40. — Ampelis sanguinicollis *Licht.*
2. P. *granadensis* (Lafr.) Rev. Zool. 1846. p. 277.
3. P. *orenocensis* (Lafr.) Rev. Zool. 1846. p. 277.

GYMNOCEPHALUS *Geoffr.*†

Bill long, and the base rather depressed, with the culmen gradually curved, and the sides compressed to the tip, which is emarginated; the nostrils lateral, and placed in front of a membranous groove, with the opening large, rounded, and exposed. *Wings* long, with the fourth quill longest. *Tail* rather short

* Established in the *List of the Genera of Birds* in 1840.
† Established by Geoffroy St. Hilaire in 1809 (*Ann. du Mus.* xiii. p. 237.).

and rounded. *Tarsi* and *Toes* similar to those of the preceding genus. The head entirely denuded of feathers.

The species that constitutes this genus is found in Cayenne and the adjacent countries.

G. *calvus* (Gmel.) Pl. enl. 521. — Gymnocephalus capucinus *Geoffr.*; Gym. cayanensis *Steph.*, Levaill. Ois. d'Amér. 49.

Cephalopterus *Geoffr.**

Bill long, and rather depressed, with the culmen gradually curved, and the sides compressed to the tip, which is emarginated, and slightly hooked; the gonys long and ascending; the nostrils lateral, placed in a membranous groove, with the opening large and spatuliformed. *Wings* moderate, and rather pointed, with the third quill longest. The other characters like those of the former genus. The head of the male surmounted by a large crest, a portion hanging over the bill; the breast naked, with a pendulous plumed covering.

The type of this division is found in the Brazils.

C. *ornatus* Geoffr. Ann. du Mus. xiii. t. 15. — Coracina cephaloptera *Vieill.*; Ampelis umbellata *Steph.* Temm. Pl. col. 255.

Gymnoderus *Geoffr.*†

Bill rather short, and broad at the base, with the culmen gradually curved, and the sides compressed to the tip, which is slightly emarginated; the gonys moderate, and slightly ascending; the nostrils lateral, with the opening nearly rounded, and exposed, but the groove entirely clothed with short downy feathers. *Wings* long; with the third, fourth, and fifth quills equal and longest. *Tail* moderate, broad, and even. *Tarsi* shorter than the middle toe, and covered in front with transverse scales. *Toes* moderate; the lateral toes nearly equal, the outer toe united at the base, the inner free; the hind toe long, and padded beneath; the claws long, compressed, and curved. The head, and the back and front of the neck, more or less covered by short downy feathers; the sides of the latter entirely denuded of them.

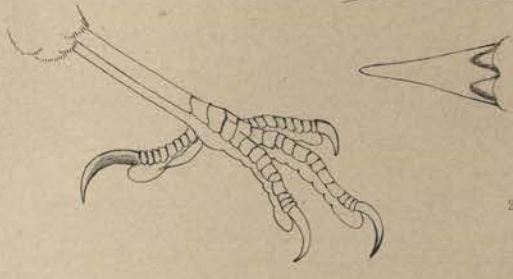
The type of this division is found in Cayenne, Louisiana, and Guiana, where it inhabits the vast forests, and at times visits the plantations for the purpose of procuring its food, which consists of various fruits and berries. The nest is said to be formed at the tops of the high trees that border the great rivers.

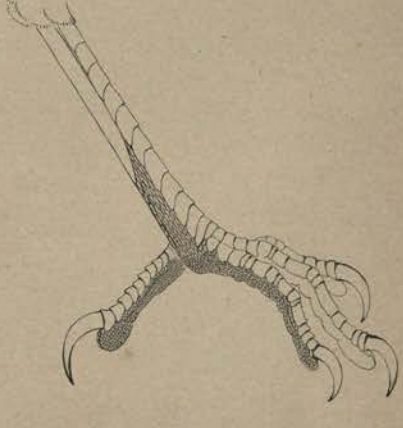
G. *fœtidus* (Linn.) Strickl. Pl. enl. 609. — Corvus nudicollis *Bodd.*; C. nudus *Gmel.*; C. gymnoderus *Vieill.*; Gymnoderus cayanensis *Geoffr.*

* Established by Geoffroy St. Hilaire in 1809 (*Ann. du Mus.* xiii. p. 235.)
† Established by Geoffroy St. Hilaire in 1809 (*Ann. du Mus.* xiii. p. 237). *Coracina* of Vieillot (1816) is synonymous.

C. Hullmandel & Pauwels Lithogrs

CORCORAX
leucopterus. (Vig. et Horsf.)





C. Hullmandel's Patent Lithotint.

1 FREGILUS graculus. 2 PYRRHOCORAX alpinus. 3 CORCORAX leucopterus.

The sixth Subfamily,

PYRRHOCORACINÆ, or CHOUGHS,

have the Bill more or less long, slender, and slightly curved, with the culmen rounded and curved to the tip, which is rather acute and slightly emarginated; the nostrils basal, lateral, and hidden by the projecting feathers; the Wings lengthened and pointed; the Tail long and rounded, or even; the Tarsi strong and rather short; the Toes moderate, with the lateral ones nearly equal.

PYRRHOCORAX *Vieill.**

Bill moderate, and rather slender, with the culmen gradually curved to the tip, which is emarginated; the sides compressed, and the gonys moderate, and advancing upwards; the nostrils basal, lateral, and covered by the projecting plumes. *Wings* reaching nearly to the end of the tail, and pointed, with the fourth and fifth quills the longest. *Tail* long and even. *Tarsi* short, and scutellated with an almost entire scale. *Toes* robust, and covered with rough scales; the lateral toes nearly equal.

The type of this genus is found in the mountains of Europe, where it generally lives about the snowy range, but on the approach of winter it sometimes descends to a lower elevation. Its food consists of insects, grain, and worms. The nest is generally formed in an opening of the rocks or walls; and the female deposits from three to five eggs.

1. P. *alpinus* Vieill. Pl. enl. 531. — Corvus pyrrhocorax *Linn.* Gould, B. of Eur. pl. 218.

2. P. (♀) *crinitus* (Daud.) Temm. Le Vaill. Ois. d'Afr. t. 82. — Corvus sexsetaceus *Shaw*; Pyrrhocorax hexagenus *Cuv.*

CORCORAX *Less.*†

Bill long, rather slender, and arched, with the culmen rounded and curved to the tip; the sides compressed, and the gonys long and slightly curved; the nostrils basal, lateral, and partly hidden by the frontal plumes, with the opening rounded. *Wings* lengthened and pointed, with the fourth quill longest. *Tail* very long, broad, and rounded. *Tarsi* long, strong, and covered with broad scales in front. *Toes* moderate, robust, and strongly scaled, with the lateral toes nearly equal, and the hind toe long and strong; the claws moderate, curved, and acute.

* Established by Vieillot in 1816 (*Analyse, &c.* p. 36.).
† M. Lesson established this genus in 1831 (*Traité d'Ornithol.* p. 324.).

It is gregarious, and seems to prefer the elevated portions of Australia, of which it is a native. The nest is said to be begun by laying two sticks in a parallel manner; it is then built up with mud or clay, and lined with a few feathers.

C. *melanorhynchus* (Vieill.) — Pyrrhocorax leucopterus *Temm.*; Fregilus leucopterus *Vig. & Horsf.*; Corcorax australis *Less.*

Coracia *Briss.**

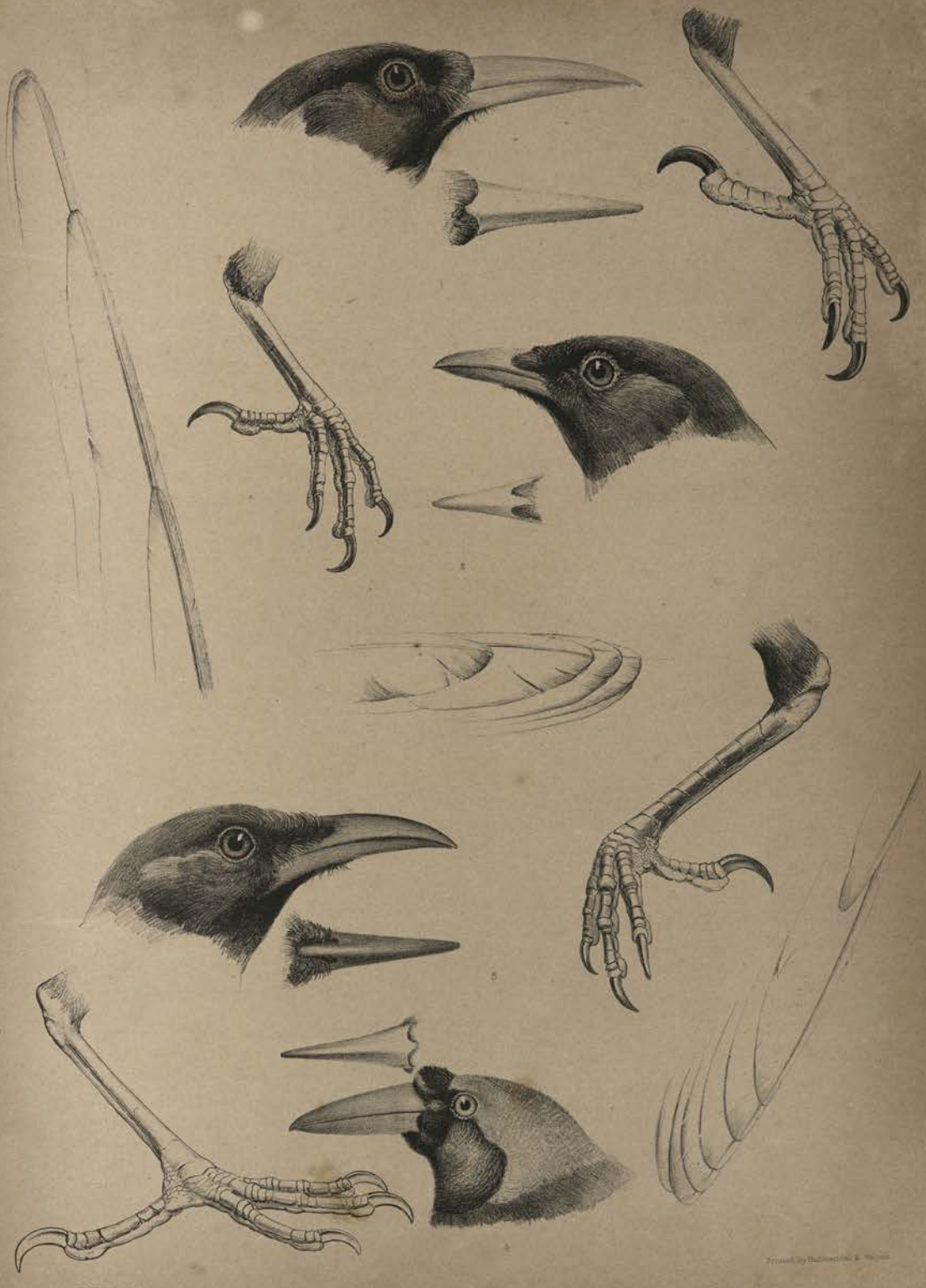
Bill long, rather slender, and arched, with the sides much compressed towards the tip, which is entire and projects beyond that of the lower mandible; the nostrils basal, lateral, and entirely hidden by the frontal plumes. *Wings* very long, reaching to the end of the tail and pointed, with the fourth quill the longest. *Tail* moderate and nearly equal. *Tarsi* short, and covered in front with broad scales, which are sometimes almost obliterated. *Toes* moderate, strong, and covered with strong prominent scales, the lateral toes nearly equal; the claws moderate and curved.

This bird is found on the lofty rocks or cliffs on the sea coast, and on the alpine mountains of Europe and Asia. It is a lively, restless, and cunning bird, and it has been remarked that it is always found in gravelly stony places, or perched on walls. Its food chiefly consists of insects, which it searches for in the crevices of rocks, and the joints of walls, by means of its slender and sharp-pointed bill. It also feeds on grains and berries. The nest is usually built on the sea cliffs, or in old buildings and in the towers of churches that are situated near the coast; it is formed of sticks, lined with wool and hair.

C. *gracula* (Linn.) Pl. enl. 255. — Coracia erythrocephala *Vieill.* Gal. des Ois. t. 103. — Fregilus Europæus *Less.*; Fr. erythropus *Swains.*; Pyrrhocorax graculus *Temm.*; Corvus docilis et C. eremita *Gmel.* Gould, B. of Eur. pl. 219.

* Brisson established this genus in 1760. In 1816 M. Koch used *Graculus*, and in 1817 Cuvier proposed *Fregilus*, for the same set of birds.

PARADISEA
rubra. Vieill



Wolf del et lith.

1. PREGILUS graculus. 2. PYRRHOCORAX alpinus. 3. CORCORAX leucopterus. 4. PARADISEA apoda.

The second Family,

PARADISEIDÆ, or BIRDS OF PARADISE,

have the Bill long, strong, with the culmen curved, and the sides compressed to the tip, which is emarginated; the base of the upper mandible concealed by short feathers, which also cover the nostrils: the Wings long and rounded: the Tail of various lengths, even or rounded: the Tarsi robust, long, and covered by a single lengthened scale: the Toes long, strong; the outer toe longer than the inner, and united at the base by a membrane; the hind toe very long and robust: the Claws long, strong, and curved.

The only Subfamily,

PARADISEINÆ, or BIRDS OF PARADISE,

have the same characters as given above.

PARADISEA *Linn.*

Bill rather long and robust, with the culmen curved to the tip, which is emarginated; the sides compressed, the gonys long and ascending; the nostrils lateral, and entirely covered by the short plumes that conceal the base of the mandible. *Wings* long and rounded, with the fourth to the seventh quills nearly equal and longest. *Tail* more or less long, broad, and even or rounded. *Tarsi* as long as the middle toe, robust, and covered by an entire scale. *Toes* very long, strong; the outer toe longer than the inner, and united at the base; the hind toe longer than the last, robust; the claws long, strong, much curved, and acute. The sides of the body, neck, breast, tail, and sometimes the head, are ornamented with prolonged showy feathers.

These splendid birds are peculiar to New Guinea. They are active and lively in their movements, and are usually observed on the tops of the high trees, though they descend in the morning and evening to the lower branches, to search for their food, and to hide among the foliage from the extreme heat of the sun. The fruits of the teak and of

[a] Established by Linnæus in 1735. *Manucodiata* of Brisson (1760), *Cicinnurus*, *Parotia*, *Lophorina*, of Vieillot (1816), and *Diphyllodes* of M. Lesson (1835) are probably coequal.

the fig trees form the principal part of their subsistence; and they occasionally feed on insects, of which, if large, they reject the legs, wings, and the lower parts of the abdomen. Their cry is loud and sonorous, and poured forth in a rapid succession of notes. The first four notes, says Mr. Lay, are very exactly intonated, very clear, and very sweet; the last three are repeated in a kind of caw, a very high refinement of the voices of a daw or a crow, yet possessing a striking resemblance.

1. P. *apoda* Linn. Pl. enl. 254., Edwards's Birds, pl. 110., Vieill. Ois. dor. t. 1., Levaill. Ois. de Parad. t. 1, 2. — Paradisea major *Shaw*.

2. P. *papuana* Bechst. Levaill. Ois. de Parad. t. 4, 5., Vieill. Ois. dor. t. 2., Gray, Ill. Ind. Zool. pl. 27. — Paradisea minor *Forst.*

3. P. *rubra* Vieill. Vieill. Ois. dor. t. 3., Levaill. Ois. de Parad. t. 6. — Paradisea sanguinea *Shaw*.

4. P. *speciosa* Bodd. Pl. enl. 631., Sonn. Voy. t. 98. — Paradisea magnifica *Scop.* Lath. Gen. Syn. pl. 19., Vieill. Ois. dor. t. 4., Levaill. Ois. de Parad. t. 9, 10.; P. cirrhata *Lath.*; Diphyllodes seleucides *Less.*; Type of Diphyllodes *Less.* 1835.

5. P. *regia* Linn. Pl. enl. 496., Edwards's Birds, pl. iii., Levaill. Ois. de Parad. t. 7., Vieill. Ois. dor. t. 5. — Cicinnurus spinturnix *Less.*; Type of Cicinnurus *Less.* (1816).

6. P. *atra* Bodd. Pl. enl. 632., Sonn. Voy. t. 96. — Paradisea superba *Scop.* Vieill. Ois. dor. t. 7., Levaill. Ois. de Parad. t. 14, 15., Nat. Misc. pl. 1021.; P. nigra *Forst.*; P. furcata *Lath.*; Type of Lophorina *Vieill.* (1816).

7. P. *sexpennis* Bodd. Pl. enl. 633., Sonn. Voy. t. 97. — Paradisea penicillata *Scop.*; P. aurea *Gmel.*; P. sexsetacea *Lath.* Vieill. Ois. dor. t. 6., Levaill. Ois. de Parad. t. 12, 13., Gal. des Ois. t. 97.; Type of Parotia *Vieill.* (1816).

July, 1847.

C. Hullmandel's Patent Lithotint.

JUIDA
ignita (Erman)

The third Family,

STURNIDÆ, or STARLINGS,

have the Bill more or less long, with the sides compressed, the culmen slightly curved or straight to the tip, which is sometimes emarginated, and the gape often angulated; the Wings long and pointed; the Tail generally long, and even or graduated; the Tarsi more or less long, strong, and covered in front with broad scales; the Toes long and strong, the hind toe very long and robust; the claws long, curved, and acute.

The first Subfamily,

PTILONORHYNCHINÆ, or GLOSSY STARLINGS,

have the Bill strong, moderate, with the sides compressed, and the culmen curved to the tip, which is emarginated; the Wings moderate and pointed; the Tail of various length, and graduated or even; the Tarsi strong, and covered with broad scales; the Toes long, strong; the lateral ones unequal; and the hind toe long and strong.

PTILONORHYNCHUS *Kuhl.**

Bill moderate, and compressed on the sides, with the culmen elevated and arched to the tip, which is emarginated; the gonys long, and advancing slightly upwards; the lateral margins curved; the nostrils basal, lateral, and sunk, with the opening large, and more or less concealed by the projecting plumes. *Wings* long and pointed, with the first three quills graduated, and the fourth and fifth equal and longest. *Tail* short and even. *Tarsi* much longer than the middle toe, robust, and covered with broad scales. *Toes* long and strong, with the outer toe the longest; the hind toe long and robust; the claws long, compressed, and acute.

These remarkable birds, called by Mr. Gould the Bower Birds, are peculiar to Australia, where they are found in the forests that border the principal rivers, as well as in the cedar brushes. When perched on the lofty branches of the trees, they emit loud and harsh notes, which, with regard to one of the species, can only be compared to the noises of the domestic cat. In the autumn they congregate in small flocks, and are then often seen on the ground. The adult male birds of the satin bower birds are more rarely seen than the females and young males; and these latter are supposed to be from two to three years old before they exhibit their rich glossy black plumage. They feed on various berries and fruits, especially wild figs and the native cherry, which when ripe form their chief food. They are very

* It was in 1820 that Kuhl established this genus in his *Beiträge*.

destructive to the ripening crops of the settlers. The extraordinary bower-like structures which are constructed by these birds have been described by Mr. Gould in the following words. "They are usually placed under the shelter of the branches of some overhanging tree, in the most retired part of the forest, and differ considerably in size. The base consists of an extensive and rather convex platform of sticks firmly interwoven, on the centre of which the bower itself is built; this, like the platform on which it is placed, and with which it is interwoven, is formed of sticks and twigs, but of a more slender and flexible description, the tips of the twigs being so arranged as to turn inwards, and nearly meet at the top; in the interior of the bower the materials are so placed that the forks of the twigs are always presented outwards, by which arrangement not the slightest obstruction is offered to the passage of the birds. The interest of this curious bower is much enhanced by the manner in which it is decorated, at and near the entrance, with the most gaily coloured articles that can be collected, such as the blue tail-feathers of the rose-bill and Pennantian parrots, bleached bones, the shells of snails, &c. Some of the feathers are stuck in among the twigs, while the others, with the bones and shells, are strewed about near the entrances. For what purpose these curious bowers are made is not yet perhaps fully understood; they are certainly not used as a nest, but as a place of resort for many individuals of both sexes, which, when there assembled, run through and around the bower in a sportive and playful manner, and that so frequently that it is seldom entirely deserted."

1. P. *holosericeus* Kuhl. Pl. col. 395. 422. — Corvus squamulosus *Ill.*; Pyrrhocorax violaceus *Vieill.*; Ptilonorhynchus Mac Leayii *Lath. Vig. & Horsf.*

2. P. *Smithii* Vig. & Horsf. Linn. Trans. xiii. p. 264. — Ptilonorhynchus viridis *Wagl.*; Kitta virescens *Temm.* Pl. col. 396.

Chlamydera *Gould.**

Bill moderate; the culmen elevated and arched to the tip, which is emarginated; the sides compressed, the lateral margins curved, and the gonys moderate and slightly advancing upwards; the nostrils basal, lateral, and exposed, with the opening rounded, and pierced in a membrane. *Wings* long and pointed, with the first quill much shorter than the second, which is rather shorter than the third and fourth; these are equal and longest. *Tail* long and slightly rounded. *Tarsi* longer than the middle toe, robust, and covered in front with broad scales. *Toes* long and strong, with the outer toe longer than the inner, and the hind toe long and robust; the claws long, curved, and acute.

It is in the forests and brushes of Australia that these birds are found; from their extreme shyness they are rarely observed, except when they seek the water holes to drink, and, if disturbed, they mount to the topmost branches of the loftiest trees, or fly off to a fresh locality, at the same time giving utterance to a harsh disagreeable note. Their food consists almost entirely of fruits and seeds. Mr. Gould informs us that the runs or bowers of these birds are placed on the plains studded with small trees, and in the brushy clothing of the lower hills. They are considerably longer and more avenue-like than those of the satin bower birds, being in many instances three feet in length. They are outwardly built of twigs, and beautifully lined with tall grasses, so disposed that their heads nearly meet; the decorations are very profuse, and consist of bivalve shells, crania of small mammalia, and other bones. Evident and beautiful indications of design are manifest throughout the whole of the bower and decorations formed by this species, particularly in the manner in which the stones are placed within the bower, apparently to keep the grasses with which it is lined fixed firmly in their places; these stones diverge from the mouth of the run on each side, so as to form little paths, while the immense collection of decorative materials, bones, shells, &c., are placed in a heap before the entrance of the avenue; this arrangement being the same at both ends.

1. C. *nuchalis* (Jard. & Selby), Gould, Ill. Orn. pl. 103., B. of Austr. pl.

2. C. *maculata* Gould, Proc. Z. S. 1836. p. 106., B. of Austr. pl., Voy. au Pole Sud, Ois. t. 7. f. 2.

3. C. ? ——. Voy. au Pole Sud, Ois. t. 15. f. 2.

* Mr. Gould originally established this genus in 1836, with the name *Calodera*, which he has since changed to the above.

Astrapia *Vieill.**

Bill moderate, with the culmen slightly curved to the tip, which is emarginated and curved; the sides much compressed; and the gonys long and straight; the nostrils basal, lateral, sunk, and partly hidden by the velvety frontal plumes. *Wings* moderate and pointed, with the third and fourth (?) quills the longest. *Tail* remarkably long, and much graduated, with the feathers broad and rounded at their ends.

These birds are found in the great forests of New Guinea. Their habits and manners have not been noticed by ornithologists.

1. A. *nigra* (Gmel.) Vieill. Ois. de Parad. t. 8, 9., Le Vaill. Ois. de Parad. t. 20, 21, 22. — Paradisea gularis *Lath.*; Astrapia gularis *Vieill.* Gal. des Ois. t. 107.

2. A. *carunculata* (Less.) Ey. et Souley, Rev. Zool. 1840. 1., Voy. de la Bonite, Ois. t.

Juida *Less.*†

Bill moderate, more or less slender; the sides compressed, and the culmen slightly curved to the tip, which is emarginated; the gonys long, and slightly advancing upwards; the nostrils basal, lateral, and sunk, with the feathers advancing to the opening, which is exposed and oval. *Wings* moderate and pointed, with the first quill short, and the second rather shorter than the third, fourth, and fifth, which are the longest. *Tail* more or less long, slightly rounded or much graduated. *Tarsi* about the length of the middle toe, robust, and covered with broad scales. *Toes* rather long, strong, and roughly scaled, the lateral toes unequal, the outer one longer than the inner, the hind toe long and robust; the claws strong, short, slightly curved, and compressed.

It is in the warmer portions of the continent of Africa, that these showy birds migrate from place to place. They are usually observed in extensive flocks, wherever they can procure their subsistence, which consists of fruits and berries. The fruit gardens and vineyards of the settlers are sadly attacked by these destructive birds, when the fruits are just on the point of ripening and becoming useful for wine, &c. At other times they are content to search the humid ground or manure for insects and worms, or are seen on the backs of animals examining the hair for the insects which are lodged in such places. The nest is formed in the holes of rocks or trees, and sometimes many nests are found in one place side by side. The eggs are generally five or six in number.

1. J. *ænea* (Linn.) Less. Pl. enl. 220., Le Vaill. Ois. d'Afr. t. 87. — Merula viridis longicauda &c. *Briss.*; Corvus aureo-viridis *Shaw*, Swains. B. of W. Afr. pl. 7.

2. J. *australis* (A. Smith). — Lamprotornis Burchellii *A. Smith*, Ill. S. Af. Zool. Birds, pl. 47.; Type of Megalopterus *Smith* (1836).

3. J. *purpuroptera* (Rüpp.) Syst. Uebers. &c. t. 25.

4. J. *splendida* (Shaw), Le Vaill. Ois. d'Afr. t. 85.

5. J. *aurata* (Gmel.) Pl. enl. 540. — Turdus juida *Bodd.*

6. J. *phœnicoptera* (Swains.) Le Vaill. Ois. d'Afr. t. 89., Shaw, Nat. Misc. pl. 873.

* Established by Vieillot in 1816 (*Analyse, &c.*, p. 36.). *Lamprotornis* of M. Temminck (1820), *Paradigalla* of M. Lesson (1835), and *Lamprornis* of Nitzsch (1840) are synonymous.

† It was in 1831 that M. Lesson established this genus (*Traité d'Ornith.* p. 407.). *Spreo* of M. Lesson (1831), *Lamprocolius* of M. Sundevall (1835), and *Megalopterus* of Dr. Smith are synonymous.

7. J. *chloroptera* (Swains.). Two Cent. and a Quart. 356.
8. J. *cyanotis* (Swains.) B. of W. Afr. p. 151.
9. J. *ignita* (Erman), Verz. von Thier. p. 7. t. 3. f. 1.
10. J. *melanogaster* (Swains.) Two Cent. and a Quart. p. 297.
11. J. *chrysotis* (Swains.) B. of W. Afr. pl. 6.
12. J. *nitens* (Linn.) Pl. enl. 561.— Turdus splendens *Shaw*, Nat. Misc. pl. 71. ?
13. J. *ptilonorhynchus* (Swains.) Le Vaill. Ois. d'Afr. t. 90.
14. J. *lucida* (Erman), Verz. t. 3. f. 2.
15. J. *ornata* (Daud.) Le Vaill. Ois. d'Afr. t. 86.
16. J. *erythrogaster* (Bodd.) — Turdus chrysogaster *Gmel.* Pl. enl. 358. 221. var.
17. J. *rufiventris* (Rüpp.) Faun. t. 11. f. 1.
18. J. *superba* (Rüpp.) Syst. Uebers. &c. t. 26.
19. J. *chalybea* (Rüpp.) Faun. t. 11. f. 2., Ehrenb. Symb. Phys. t. 10.
20. J. *leucogaster* (Linn.) Pl. enl. 648. f. 1., Swains. B. of W. Afr. pl. 8.
21. J. *mauritiana* (Linn.) Pl. enl. 648. f. 2.
22. J. *albirostris* (Rüpp.) Faun. Abyss. t. 9.
23. J. *chalcura* (Erman), Verz. p. 8.
24. J. *bicolor* (Gmel.) Le Vaill. Ois. d'Afr. t. 88.— Turdus grillivorus *Barrow*; Lamprotornis albiventris *Swains.*; Type of Spreo *Less.* 1834.
25. J. *nabouroup* (Daud.) Le Vaill. Ois. d'Afr. t. 91.— Lamprotornis fulvipennis *Swains.*
26. J. *morio* (Daud.) Pl. enl. 199., Le Vaill. Ois. d'Afr. t. 83.— Corvus rufipennis *Shaw.*
27. J. *erythroptera* (Gmel.) Pl. enl. 354.
28. J. *tenuirostris* (Rüpp.) Faun. Abyss. t. 11. f. 1.

Calornis *G. R. Gray.**

Bill moderate, broad at the base, and the sides compressed, with the culmen elevated and arched to the tip, which is emarginated; the nostrils exposed and rounded, with the frontal plumes advancing to the opening. *Wings* moderate and pointed, with the first quill spurious, and the second nearly as long as the third and fourth, which are the longest. *Tail* more or less long, rounded, or graduated at the end. *Tarsi* as long as the middle toe, strong, and covered with broad scales. *Toes* moderate, strong, with the outer longer than the inner; the hind toe long and strong; the claws moderate, curved, and acute.

The birds that compose this genus are found in the continent of India and its isles. They live in flocks, migrating from place to place in search of their food, which consists of berries, fruits, and insects. They are by no means shy, but very courageous, and are rarely observed on the ground. The nest is formed of roots of grass and dried leaves of trees, in holes of trees and buildings. They are also fond of making their nests in dove cots, from which they will expel the pigeons; and it is not unfrequent to observe twenty or thirty pairs to infest one pigeon-house.

1. C. *panayensis* (Scop.) Sonn. Voy. t. 73.—Turdus cantor *Gmel.* Pl. col. 149.; Turdus chalybæus *Horsf.*; Lanius insidiator *Raffl.*
2. C. *metallica* (Temm.) Pl. col. 266.
3. C. *cærulea* (Scop.) Sonn. Voy. t. 108. — Turdus violaceus *Gmel.*
4. C. *columbina* (Gmel.)
5. ? C. *erythrophrys* (Temm.) Pl. col. 267. — Type of Enodes *Temm.* (1838).
6. ? C. ———. Voy. au Pole Sud, Ois. t. 16. f. 2.
7. ? C. ———. Voy. au Pole Sud, Ois. t. 14. f. 2.

Sissirostrum *Lafr.*†

Bill moderate; the culmen elevated, much compressed and acute at the base, and curved to the tip, which is emarginated; the gape broad; the sides compressed, the lateral margins slightly curved, and the gonys long, straight, and advancing upwards; the nostrils lateral, oblique, and sunk in a narrow groove, with the front edge keeled, and the opening oblong oval. *Wings* moderate, with the first quill

* This genus was proposed in my *List of Genera* in 1841. It embraces those birds that form the second division of M. Temminck's genus of *Lamprotornis*, and probably also his genus *Enodes* (1838).

† The Baron de Lafresnaye established this genus in 1845 (*Rev. Zool.* p. 93.).

spurious, and the second and third equal and longest. *Tail* long and graduated. *Tarsi* shorter than the middle toe, and covered with broad scales. *Toes* long, strong, and covered with strong scales, the outer toe longer than the inner; the hind toe long and strong; the claws long, compressed, and acute.

This bird was found in the Island of Celebes. Its habits and manners have not been recorded.

S. *Pagei* Lafr. Rev. Zool. 1844. p. 98..

Aplonis *Gould.**

Bill short, compressed on the sides, and the culmen much elevated and arched to the tip, which is emarginated; the gonys long and slightly advancing upwards; the nostrils basal, lateral, exposed, and rounded. *Wings* moderate and pointed, with the first quill spurious, and the second nearly as long as the third and fourth, which are the longest. *Tail* moderate and even. *Tarsi* longer than the middle toe, robust, and covered with broad scales. *Toes* moderate, rather slender, the lateral ones unequal, the outer longest; the hind toe long and robust.

The species of this genus are only found in Australia and New Zealand. Their habits and manners have not yet been recorded by naturalists.

1. A. *marginatus* Gould, Proc. Z. S. 1836. p. 73.
2. A. *fuscus* Gould, Proc. Z. S. 1837. p. 73.
3. A. *novæ hollandiæ* (Gmel.).
4. A. *zelandicus* (Quoy & Gaim.) G. R. Gray, Zool. Ereb. and Terr. p. 8., Voy. de l'Astrol. Ois. t. 9. f. 1.
5. A. *obscurus* (Dubus), G. R. Gray, Zool. Ereb. and Terr. p. 8.

Saraglossa *Hodgs.*†

Bill long, very slender, broad, and rather depressed at the base, and the sides compressed, with the culmen curved to the tip, which is slightly emarginated; the gonys long, and slightly advancing upwards; the nostrils basal, lateral, rounded, and pierced in a membranous groove. *Wings* long and pointed, with the first quill spurious, and the second nearly as long as the third and fourth, which are the longest. *Tail* moderate and even. *Tarsi* as long as the middle toe, strong, and covered in front with broad scales. *Toes* moderate, strong, and the lateral ones nearly equal; the hind toe long and robust; the claws short, curved, and acute.

The typical species is found in Nepaul, while the second species is said to be from Madagascar.

1. S. *spilopterus* (Vigors), Hodgs. Proc. Z. S. 1831. p. 35., Gould, Cent. of Birds, pl. 34.
2. S. *madagascarienis* (Gmel.) Pl. enl. 557. f. 1.

* It was in 1836 that Mr. Gould established this genus (*Proc. Zool. Soc.* 1836. p. 73.).
† Mr. Hodgson established this genus in 1844. (*List of the Birds of Nepaul.*)

C. Hullmandel's Patent Lithotint.

GRACULUS
coronatus. (Blyth).

The second Subfamily,

GRACULINÆ, or GRAKLES,

have the Bill more or less long, broad at the base, much compressed on the sides, with the culmen rather curved to the tip, which is slightly emarginated; the Nostrils basal, lateral, rounded, exposed, with the frontal plumes advancing to, or covering the opening; the Wings long, with the first quill short, and the third and fourth the longest; the Tail short and even, or slightly graduated; the Tarsi short; the Toes long and strongly scutellated.

GRACULA *Linn.**

Bill as long, or longer than the head, strong, with the culmen rather curved; the sides much compressed to the tip, which is slightly emarginated, and the lateral margins nearly straight, or slightly curved; the gonys long, straight, and advancing upwards; the nostrils lateral, the opening rounded and exposed, with the frontal plumes advancing to, or more or less covering it on each side. *Wings* long, with the first quill rather rudimental, the second rather shorter than the third and fourth, which are the longest. *Tail* short and nearly even, or long and rounded. *Tarsi* rather shorter than the middle toe, robust, and covered with strong scales. *Toes* long, strongly scaled, the lateral ones unequal, the outer one the longest, and united at the base; the hind toe very long and strong; the claws long, strong, and curved; various portions of the head naked, and sometimes carunculated.

It is in the lofty jungles of India and its isles, that the species of this genus are found. They are generally seen in pairs, or small parties of five or six individuals, frequenting the tops of the highest trees, seeking fruits, chiefly berries, of various kinds. They are sometimes observed in newly made gardens, where a few large trees are left standing, flying cheerfully from tree to tree, resting a few minutes and whistling, and then flying off again to a fresh tree. Their power of song is very rich, varied, and pleasing; they, however, have several harsh notes, which are often heard in the jungles they frequent. The other species are found in the Philippine Islands and New Guinea.

1. G. *religiosa* Linn. Pl. enl. 268. — Eulabes javanus *Cuv.*; Mainatus sumatranus *Less.*
2. G. *musica* (Temm.) Nouv. Dict. d'Hist. Nat. t. 9. 4. f. 1. — Eulabes indicus *Cuv.*
3. G. *Dumontii* (Less.) Wagl. Voy. de la Coqu. Ois. t. 26., Kittl. Kupf. Vog. t. 13. f. 1.; Type of Mino *Less.* (1828).
4. G. *coronata* (Blyth.) Jour. As. Soc. Beng. 1842. p. 194.; Type of Ampuliceps of *Blyth* (1842).
5. G. *calva* Gmel. Pl. enl. 200., Kittl. Kupf. Vog. t. 13. f. 2.; Type of Gymnops *Cuv.* (1829).

* Linnæus established this genus in 1756 (*Systema Naturæ*). *Eulabes* of Cuvier (1817), *Mainatus* of M. Lesson (1831), and *Maina* of Mr. Hodgson (1836) are synonymous terms with the one employed. It embraces *Mino* of M. Lesson (1828), which was proposed under the name of *Gymnops* by Cuvier in 1829.

BUPHAGA
africana Linn.

1

BUPHAGINÆ.

2

(Hullmandel & Walton Lithogr.)

1. GRACULA musica. 2. BUPHAGA africana.

The third Subfamily,

BUPHAGINÆ, or BEEF-EATERS,

have the Bill moderate, broad, with the culmen slightly depressed and curved to the tip, which is entire; the lateral sides of the lower mandible broad, and the gonys short and ascending; the nostrils basal, small, and partly closed by a membrane: the Wings long and pointed: the Tail long and graduated, with the end of each feather pointed: the Tarsi short and strong: the Toes moderate, strong; and armed with moderate, much compressed, curved, and acute claws.

BUPHAGA *Linn.**

Bill strong and broad at the base, with the culmen slightly depressed and curved to the tip, which is entire; the lateral sides of the lower mandible broad, projecting posteriorly under the eyes and rounded; the gonys moderate and curved upwards; the nostrils basal and lateral, with the opening small and partly closed by a membrane. *Wings* long; with the first quill very short, and the second nearly as long as the third, which is the longest. *Tail* long, broad, and wedge-shaped, with the end of each feather pointed. *Tarsi* as long as the middle toe, strong, and covered with broad scales. *Toes* moderate and strong, with the lateral toes nearly equal, the outer united at the base, and the inner free; the claws much compressed, curved, and acute.

The species of this genus are found on the continent of Africa. They are always noticed in company with the cattle, on whose backs they are generally seen clinging, while seeking for the parasitical insects that annoy those animals.

1. B. *africana* Linn. Pl. enl. 293., Levaill. Ois. d'Afr. t. 97., Vieill. Gal. des Ois. t. 93.—Buphaga rufescens *Vieill.*

2. B. *erythrorhyncha* (Stanl.) Salt's Trav. App. p. lix., Pl. col. 465.—Buphaga habesinica *Ehrenb.* Symb. Phys. t. 9.

* Established by Linnæus in 1766. *Buphagus* of Brisson (1760) is synonymous.

PASTOR
tricolor Horsf

The fourth Subfamily,

STURNINÆ, or STARLINGS,

have the Bill more or less long, with the culmen curved, or straight to the tip, which is obtuse, and somewhat flattened; the Nostrils basal, placed in a membranous groove, and sometimes clothed with short feathers: the Wings moderate: the Tail rather short, and even or rounded: the Tarsi rather long, strong, and covered with broad scales: the Toes long and strong; armed with strong acute claws.

PASTOR *Temm.**

Bill rather short, with the culmen curved from the base, and the sides compressed to the tip, which is rather acute, and only slightly emarginated; the lateral margins rather curved, and the gonys long and ascending; the nostrils basal, lateral, and placed in a short broad groove, which is membranous, and clothed with short feathers, with the opening oval. *Wings* long and pointed; with the first quill spurious, and the second the longest. *Tail* moderate and even. *Tarsi* nearly as long as the middle toe, rather strong, and covered with broad transverse scales. *Toes* long and rather slender; the outer toe rather longer than the inner, and united at the base; the hind toe long; the claws long, curved, and very acute.

The species of this genus inhabit Asia, Africa, and the temperate portions of Europe. They regularly migrate in large flocks on the change of seasons, and exhibit great adroitness in searching the swampy ground for their food, which consists of insects (especially their larvæ), fruits, and seeds. It is not unusual to observe these birds on the backs of cattle, seeking the insects that infest their hides. The note consists of a broken kind of whistle, varied by a sharp cry. The nest is made in the holes of trees, and in old walls.

1. P. *roseus* (Linn.) Temm. Pl. enl. 251., Levaill. Ois. d'Afr. t. 96. — Turdus seleucis *Gmel.* Gould B. of Eur. pl. 212.
2. P. *peguanus* Less. Zool. Voy. de Belang.
3. P. *sinensis* (Gmel.) Temm. Pl. enl. 617. — Pastor turdiformis *Wagl.*; P. elegans *Less.* Zool. Voy. de Belang. Ois. t. 6.; Oriolus Buffonianus *Shaw;* Type of Sturnia *Blyth.*
4. P. *dauricus* (Pall.) Act. Stockh. 1778. t. 7. f. 1. — Gracula sturnina *Pall.*
5. P. *leucocephalus* (Gmel.) — Sturnus sericeus *Gmel.* Brown, Illustr. Zool. pl. 21.; Pastor sericeus *Gray?*
6. P. *dominicanus* (Bodd.) Pl. enl. 627. f. 2. — Turdus dominicensis *Gmel.*
7. P. *canus* Blyth, Journ. A. S. B. 1844. p. 365.
8. P. *erythropygius* Blyth, Journ. A. S. B. 1846. p. 34.
9. P. *temporalis* Temm. Wagl. Syst. Av. sp. 7. — Pastor malayensis, *Eyton?*
10. P. *ruficollis* Wagl. Syst. Av. Pastor sp. 19.

* M. Temminck established this genus in 1815. *Psaroides* of Vieillot (1816), *Boscis* of P. Brehm (1828), *Nomadites* of Peteniz (183?), and *Thremmaphilus* of Mr. Macgillivray are coequal with the name employed. It embraces *Sturnia* of Mr. Blyth.

C. Hullmandel's Patent Lithotint.

SCAPHIDURUS
ater. (Vieill.)

1. SCOLECOPHAGUS ferrugineus. 2. QUISCALUS purpureus. 3. SCAPHIDURUS ater.

The fifth Subfamily,

QUISCALINÆ, or BOAT-TAILS,

have the Bill lengthened, with the culmen straight, and slightly curved at the tip; the Nostrils basal, lateral, placed in a triangular groove; the Wings moderate and pointed; the Tail lengthened and graduated, with the sides generally curved upwards; the Tarsi and Toes long, strong, and much scutellated; the hind toe long, and armed with a strong curved claw.

SCOLECOPHAGUS *Swains.**

Bill moderate, straight, and slender, the sides compressed, and the lateral margins inflexed, but not sinuated; the nostrils basal, lateral, and partly covered by a membrane. *Wings* moderate and pointed, with the first quill shorter than the second, third, and fourth, which are the longest. *Tail* moderate, flat, and slightly rounded. *Tarsi* of equal length with the middle toe, covered with broad scutellations. *Toes* long and slender; the lateral ones nearly equal; the hind toe long; and the claws slender, acute, and slightly curved.

These migratory birds are found in various parts of North and Central America. They appear during the short summer months in the neighbourhood of Hudson's Bay, searching the ground for their food, which at that time consists of worms and insects. As the winter approaches, they gather into large flocks and return to the southern parts, frequenting the corn fields, rice plantations, and wherever Indian corn is to be procured in their progress; and, as soon as spring commences, they return to the north for the summer months again. The nest is built in the lower branch of a tree, and is composed of moss and grass. The eggs are generally five in number.

1. S. *ferrugineus* (Wils.) Swains. Wils. Amer. Ornith. pl. 21. f. 3. — Gracula quiscala var. β *Lath.*; Chalcophanes virescens *Wagl.*; Oriolus niger, Turdus hudsonicus, T. noveboracensis, T. labradorius *Gmel.*; Pendulinus ater *Vieill.*; Oriolus leucocephalus *Lath.*

2. S. *mexicanus* Swains. Two Cent. and a Quart. 302.

QUISCALUS *Vieill.*†

Bill long, broad at the base, with the culmen advancing on the forehead in a point, and curved to the tip, which overhangs that of the lower mandible; the nostrils basal, oval, and half-closed by a membrane. *Wings* moderate, with the second, third, and fourth quills the longest. *Tail* long, graduated, and the sides turned upwards. *Tarsi* as long as the middle toe, strong, and greatly scutellated. *Toes* long, strong, and much scutellated, with the lateral ones nearly equal; the hind toe long and strong; the claws short, strong, and slightly curved.

* This genus was established in 1831, by Mr. Swainson (*Faun. Bor. Amer.* p. 494.).

† Established by Vieillot in 1816 (*Analyse*, p. 36.). *Chalcophanes* of Wagler (1827) is synonymous.

These birds migrate from the north to the more southern portions of the North American continent, according to the change of seasons. They assemble in considerable numbers, and entirely overrun in the winter the warmer south-eastern maritime regions, during which time they are very destructive to the various plantations. In the spring they are usually observed flying in loose flocks about the swamps and meadows, or following in the furrows after the plough; their food at this season causes them to be useful to the husbandmen, as it consists of worms, grubs, and caterpillars, of which they destroy a prodigious number; in the evening they retire to roost in cedars and pine trees, with friendly and mutual chatter. They commit, however, very great depredations on the maize, or Indian corn, as soon as it appears above the ground, by feeding only on the sweet and sprouting stem, rejecting and scattering the leaves around as an evidence of their mischievous mode of life. This plant is again attacked when the grain is in the milky state, to such vast extent, that one fourth of the crop is supposed to be devoured by these destructive birds. Previously to their departure for the Southern States, they collect from all parts in such numerous bodies that the air is darkened with their numbers; sometimes one flock is composed of many hundred thousand individuals. They select the tall cedar and pine trees, as well as bushes, for the building of their nests, which is commonly performed in society, so that ten or fifteen of them are often seen in the same tree. The nest is composed outwardly of mud, mixed with stalks and knotty roots of grass, and lined with fine dry grass and horse hair. The eggs are usually five or six in number.

1. Q. *purpureus* (Licht.) — Gracula quiscala *Linn.* Wils. Amer. Orn. pl. 21. f. 4.; Quiscalus versicolor *Vieill.* Pr. Bonap. Amer. Orn. pl. 5. f. 1., Swains. Two Cent. and a Quart. p. 298. fig. 50. a.? Oriolus ludovicianus et O. hudsonius *Gmel.* Pl. enl. 646.; Quiscalus nitens *Licht.*
2. Q. *purpuratus* Swains. Two Cent. and a Quart. p. 298. fig. 50. b.
3. Q. *major* Vieill. N. Dict. Hist. Nat. xxviii. p. 487., Pr. Bonap. Amer. Orn. pl. 4. f. 1, 2. — Chalcophanes major *Temm.*
4. Q. *corvinus* Swains. Two Cent. and a Quart. p. 300.
5. Q. *lugubris* Swains. Two Cent. and a Quart. p. 299. fig. (50. c.?)
6. Q. *tenuirostris* Swains. Two Cent. and a Quart. p. 299. fig. 51. b. c.
7. Q. *macrourus* Swains. Two Cent. and a Quart. p. 299. fig. 51. a. — Corvus mexicanus *Gmel.*
8. Q. *inflexirostris* Swains. Two Cent. and a Quart. p. 300. fig. 52.
9. Q. *peruvianus* Swains. Two Cent. and a Quart. p. 354.
10. Q. *crassirostris* Swains. Two Cent. and a Quart. p. 355.
11. Q. *subalaris* Boiss. Rev. Zool. 1840. 70.
12. Q. *fulgidus* Licht. — Sturnus Quiscalus *Daud.*
13. Q. *barita* Gmel. — Quiscalus navicularis *Licht.* Voy. l'Ile de Cuba, Ois. t. 18.?

Scaphidurus *Swains.**

Bill long, with the culmen broad at the base, advancing on the forehead, sloping to the tip, which is acute and curved, the lateral margins sinuated and angulated at the base; the nostrils basal and lateral, and the opening partly covered by a membrane. *Wings* long and pointed, with the first quill the longest. *Tail* lengthened, graduated, and the sides turned upwards. *Tarsi* as long as the middle toe, strong, and scutellated. *Toes* long, the inner toe nearly equalling the outer; the claws acute and much curved.

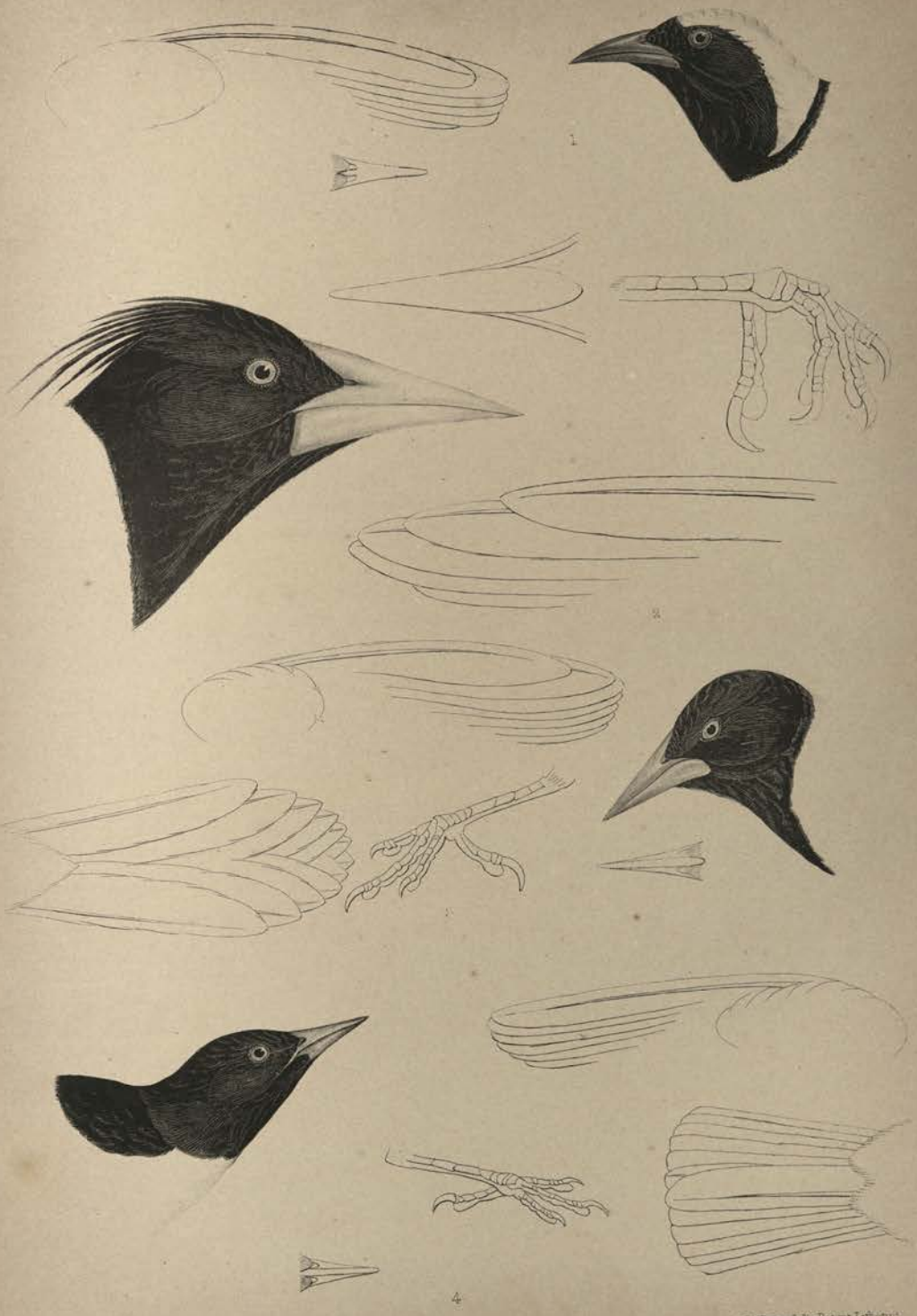
The habits of these birds are similar to those of the species of the foregoing genus; and they are found in the islands of the West Indies and the tropical parts of South America.

1. S. *ater* (Vieill.) N. Dict. Hist. Nat. v. 363., Azara, No. 60. — Psarocolius palliatus *Wagl.*; Cassidix mexicana *Less.*
2. S. ———. — Scaphidura barita *Swains.* Two Cent. and a Quart. p. 301. fig. 53. a.
3. S. *crassirostris* Swains. Two Cent. and a Quart. p. 301. fig. 53. b.
4. S. *palustris* Swains. Phil. Mag. 1827. p. 436.
5. S. *niger* (Gmel.) Swains.
6. S. ———. — Cassicus niger *Vieill.* Gal. des Ois. t. 89.
7. S. *atroviolaceus* D'Orb. Voy. l'Ile de Cuba, Ois. t. 19.

* Established by Mr. Swainson (*Faun. Boreali Amer.* p. 494.) in 1831. *Cassidix* of M. Lesson (1831) is synonymous.

Hullmandel & Walton Lithographers.

CACICUS
Wagleri (G.R.Gray)



C Hullmandel's Patent Lithotint.

1. XANTHORNUS chrysocephalus. 2. CACICUS cristatus. 3. ICTERUS jamacaii. 4. YPHANTES baltimore.

The sixth Subfamily,

ICTERINÆ, or HANGNESTS,

have the Bill more or less lengthened, with both mandibles straight or slightly curved towards the tips, which are acute and entire; the Wings lengthened and pointed; the Tail long and generally wedge-shaped; the Tarsi as long as, or shorter than, the middle toe, and broadly scaled; and the Toes moderate, and formed for grasping.

CACICUS *Cuv.**

Bill conic, longer than the head, with the culmen straight, broad, rather rounded and depressed, especially at the base, where it advances in a crescent on the forehead, and separates the frontal plumes, and acute at the tip; the sides compressed, and the lateral margins straight, but rather angulated at the base; the nostrils basal, lateral, naked, oval, and pierced in the substance of the bill. *Wings* lengthened and pointed, with the third and fourth quills longest. *Tail* lengthened and graduated. *Tarsi* shorter than the middle toe, and strongly scaled. *Toes* moderate, strong, with the lateral ones equal; the hind toe as long as the middle; and all strongly scaled, and armed with moderate curved claws.

The birds which form this division are peculiar to the tropical parts of America, residing on the trees in the vast forests, or near the habitations of man, in troops of considerable numbers. In such places they are frequently seen actively engaged in seeking their food, which consists of different kinds of fruits, berries, insects, and caterpillars that infest the trees. The nest is most ingeniously woven by the mutual labour of both sexes. It is composed of fibres and dry grasses, &c., in the form of a cylinder, sometimes of the length of three feet; the lower part is hemispherical, and it is suspended from the ends of the slender branches of lofty trees, many of them hanging from one tree.

1. C. *cristatus* (Gmel.) Daud. Pl. enl. 344., Swains. Orn. Draw. 32. — Xanthornus maximus *Pall.*, Azara No. 57.

2. C. *viridis* (Bodd.) Pl. enl. 328. — Oriolus cristatus var. *Lath.*; O. rufirostris *Shaw*; Cassicus angustifrons *Spix*, Av. Bras. t. 62.; Xanthornus virens, Naturf. 18. s. 1. t. 1.

3. C *atrovirens* (D'Orb. & Lafr.) Voy. dans l'Amér. Mér. Ois. t. 51. f. 2.

4. C. *Yuracares* (D'Orb. & Lafr.) Voy. dans l'Amér. Mér. Ois. t. 51. f. 1.

5. C. *bifasciatus* (Spix), Spix Av. Bras. t. 61.

6. C. *Montezuma* (Less.) Less. Cent. Zool. t. 7.

7. C. *latirostris* (Swains.) Two Cent. and a Quarter, p. 358. — Cassicus popayanus *Waterh.* Proc. Z. S. 1840. 183.; Type of Ocyalus *Waterh.* (1840.)

8. C. *Wagleri* G. R. Gray.

9. C. *hæmorrhous* (Linn.) Daud. Pl. enl. 482., Swains. Orn. Draw. 1. — Cassicus affinis *Swains.* Orn. Draw. 2.; Cassicus ruber *Briss.*

10. C. *solitarius* (Vieill.) — Cassicus nigerrimus *Spix*, Av. Bras. t. 63. f. 1., Swains. Orn. Draw. 4.; Amblyramphus Prevostii *Less.* Cent. Zool. t. 54., Azara No. 58.

11. C. *chrysonotus* (D'Orb. & Lafr.) Voy. dans l'Amér. Mér. Ois. t. 52. f. 1.

12. C. *persicus* (Linn.) Daud. Pl. enl. 184. — Oriolus Cassicus *Shaw*; Cassicus icteronotus *Vieill.* Swains. Orn. Draw. 3.; C. luteus *Briss.*

13. C. *albirostris* (Vieill.) Nouv. Dict. H. N. v. p. 364., Azara No. 59. — Xanthornus chrysopterus *Vigors*, Zool. Journ. iii. p. 190. pl. 9. suppl.

14. C. *melanicterus* (Pr. Bonap.) Journ. Acad. Nat. Sci. Philad., Jard. & Selby's Ill. Orn. pl. 45. — Cassiculus coronatus *Swains.*; Type of Cassiculus *Swains.* (1827); Icterus diadematus *Temm.* Pl. col. 482.

15. ? C. *leucurus* (Pr. Max.) Pr. Max. Beitr. zur Naturgesch. p. 1245.

* This division was proposed by Cuvier (*Anatomie Comparée*) between 1799 and 1800. It is the first section of *Psarocolius* of Wagler (1827). In 1816, Vieillot used the name of *Cassicus*. *Cassiculus* of Mr. Swainson (1827) and *Ocyalus* (1840) of Mr. Waterhouse form a portion of this genus.

ICTERUS *Briss.**

Bill conic, longer than, or as long as, the head, with the culmen straight and not dilated at the base, but dividing the frontal plumes by a point, and with the tip acutely pointed, the sides compressed and the lateral margins straight; the nostrils basal, lateral, with the opening oval, and partly covered by a membrane. *Wings* lengthened and pointed, with the second quill nearly as long as the third, which is the longest. *Tail* lengthened and laterally rounded. *Tarsi* as long as the middle toe, and strongly scaled. *Toes* moderate, with the lateral ones unequal, and the hind one as long as the middle toe; and all strongly scaled, and armed with moderate curved claws.

These gregarious birds reside in the vast forests of the tropical parts of America. Various fruits and insects form their principal food. They form cylindrical interwoven nests, composed of the dry fibres of various plants, with the hairs of cattle intermixed, and suspend them from the ends of the branches of trees.

1. I. *vulgaris* Daud. Pl. enl. 532. — Oriolus Icterus *Linn.*; Coracias Xanthornus *Scop.*; Pendulinus longirostris *Vieill.*
2. I. *mexicanus* (Linn.) — I. citrinus *Spix*, Av. Bras. t. 66.; Psarocolius gymnops *Wagl.*; Pl. enl. 533.; Agelaius melanicterus *Vieill.*
3. I. *leucopteryx* (Wagl.) — Oriolus mexicanus *Leach*, Zool. Misc. 1. pl. 2.
4. I. *cucullatus* Swains. Phil. Mag. 1827. 436.
5. I. *costototl* (Gmel.) Daud. Isis, 1829. p. 758.
6. I. *flavigaster* (Wagl.) Isis, 1829. 756.
7. I. *melanocephalus* (Wagl.) Isis, 1829. 756.
8. I. *graduacauda* (Less.) Rev. Zool. 1829. 105.
9. I. *Jamacaii* (Gmel.) Daud. Catesby's Car. t. 6. — Agelaius longirostris *Vieill.*
10. I. *melanochrysura* Less. Rev. Zool. 1839. 105.
11. I. *croconotus* (Wagl.) Isis 1829. p. 757
12. I. *gularis* (Licht.) Isis 1829. p. 754.
13. I. *pectoralis* (Wagl.) Isis 1829. p. 755.
14. I. *personatus* Temm. Pl. col. desc. with pl. 482.
15. I. *Xanthornus* (Linn.) Daud. Pl. enl. 5. f. 1., Edwards' Birds, pl. 243.
16. I. *Bullockii* (Swains.) Phil. Mag. 1827. 436., Audub. B. of Amer. pl. 388. f. 5.
17. I. *olivaceus* (Gmel.) Daud. Pl. enl. 606. f. 2.
18. I. *mentalis* Less. Cent. Zool. t. 41.
19. I. *pustulatus* Licht. Isis 1829. 757.
20. I. *Abeillei* Less. Rev. Zool. 1839. 101.
21. I. *musicus* (Cabot), Proc. Bost. Nat. Hist. Soc. 1834. 155.
22. I. *badius* (Vieill.) Nouv. Dict. H. N. 34. p. 535., Azara No. 63.

XANTHORNUS *Cuv.*†

Bill lengthened, or shorter than the head, with both mandibles arched for their whole length, the culmen rounded and advancing in a point on the forehead; the nostrils basal, lateral, with the opening oval, and covered by a membrane. *Wings* moderate, with the second quill slightly shorter than the third and fourth, which are longest. *Tail* lengthened and wedge-shaped. *Tarsi* shorter than the middle toe, and strongly scaled. *Toes* moderate, with the lateral ones equal, and the hind one as long as the middle toe; all strongly scaled.

This division is also composed of birds that are peculiar to the warmer parts of South and North America and the West Indies. They are generally seen in search of those insects and caterpillars that infest the fruit trees, and prey on the leaves, blossoms, and embryo of the fruit of the lofty trees in the primeval forests. The North American species only visits the northern states at the time when those insects are to be found. The nest of the North American species

* Brisson (*Ornithologie*) established this genus in 1760. In 1777 Scopoli, and Cuvier in 1829, used *Xanthornus* for the same division; in 1811, Illiger that of *Oriolus*; and these are all probably coequal with *Rhyndace* of Mœhring, who published in 1752.

† Cuvier adopted this name between 1799 and 1800 (*Anat. Compar.*). It is coequal with Vieillot's *Pendulinus*, published in 1816; and *Icterus* of Cuvier, in 1829.

is often hemispherical, externally three inches deep by two in breadth; the concavity scarcely two inches deep by two in diameter. The exterior is woven with fibres or stalks of dried grass, and the inside is usually composed of wool, or of other soft materials, wherein the female deposits four or more eggs. This nest is generally suspended from the branches of fruit trees.

1. X. *Bonana* (Linn.) Pl. enl. 535. f. 1.
2. X. *dominicensis* (Linn.) Pl. enl. 5. f. 2. — Pendulinus flavigaster *Vieill.* Voy. l'Ile de Cuba, Ois. t. 19. bis.
3. X. *chrysocephalus* (Linn.) Spix Av. Bras. t. 67. f. 1. — Gracula chrysoptera *Merr.* Icon. Av. t. 3.
4. X. *cayanensis* (Linn.) Pl. enl. 535. f. 2., Edwards' Birds, pl. 322., Swains. Zool. Ill. pl. 22. — Agelaius chrysopterus *Vieill.*
5. X. *chrysocarpus* Vigors, Proc. Z. S. 1832. 3.
6. X. *tibialis* (Swains.) Two Cent. and a Quarter, p. 302.
7. X. *varius* (Gmel.) Pl. enl. 607. f. 1. — Oriolus castaneus *Lath.*; Or. spurius *Gmel.* Pl. enl. 506. f. 2.; Or. mutatus *Wils.* Amer. Orn. pl. 4.; Pendulinus solitarius et P. viridis *Vieill.*
8. X. *mesomelas* (Licht.) Isis, 1829. p. 755. — Icterus atrogularis *Less.* Cent. Zool. t. 22.
9. X. *viridis* (Gmel.) — Oriolus virescens *Lath.*
10. X. *nidipendulus* (Gmel.) Sloane Jam. pl. 258. f. 3.
11. X. *aurantius* (Valenc.) Less. Tr. d'Orn. p. 428.
12. X. *jugularis* (Lath.) Pl. enl. 559. — Turdus ater *Gmel.*
13. X. *flavus* Daud. Pl. enl. 607. f. 2. — Oriolus capensis *Gmel.*

YPHANTES *Vieill.**

Bill conic, shorter than the head, the culmen and lateral margins straight, the former advancing on the forehead in a point, the tip acute, and the sides compressed; the nostrils basal, lateral, with the opening oval, and protected by a membrane. *Wings* lengthened and pointed, with the first quill nearly as long as the second and third, which are equal and longest. *Tail* moderate and nearly square. *Tarsi* as long as the middle toe and scaled. *Toes* moderate, with the lateral ones equal, the hind one as long as the lateral, and all strongly scaled above.

These birds are found only in North America. They are birds of passage, remaining in the Northern States during the summer, and returning to the Southern States for the winter. They generally prefer living on fruit or on other trees that are close to the residences of man. Their migration is performed during the day, and high above all the trees, in a straight and continuous course; when the evening approaches they alight on the lower branches of the trees to feed, and afterwards to rest. These birds vary much in colour before arriving at their adult plumage, which is not till the third year. Their principal food consists of caterpillars, beetles, and other insects. Wilson describes the nest thus. "It is generally fixed on the high bending extremities of the branches, by fastening a strong string of hemp or flax round two forked twigs corresponding to the intended width of the nest: with the same materials mixed with quantities of loose tow, the bird interweaves or fabricates a strong firm kind of cloth, not unlike the substance of a hat in its raw state, forming it into a pouch of six or seven inches in depth, lining it substantially with various soft substances, well interwoven with the outward netting, and lastly finished with a layer of horse-hair; the whole being shaded from the sun and rain by a natural penthouse or canopy of leaves." The female generally deposits five eggs.

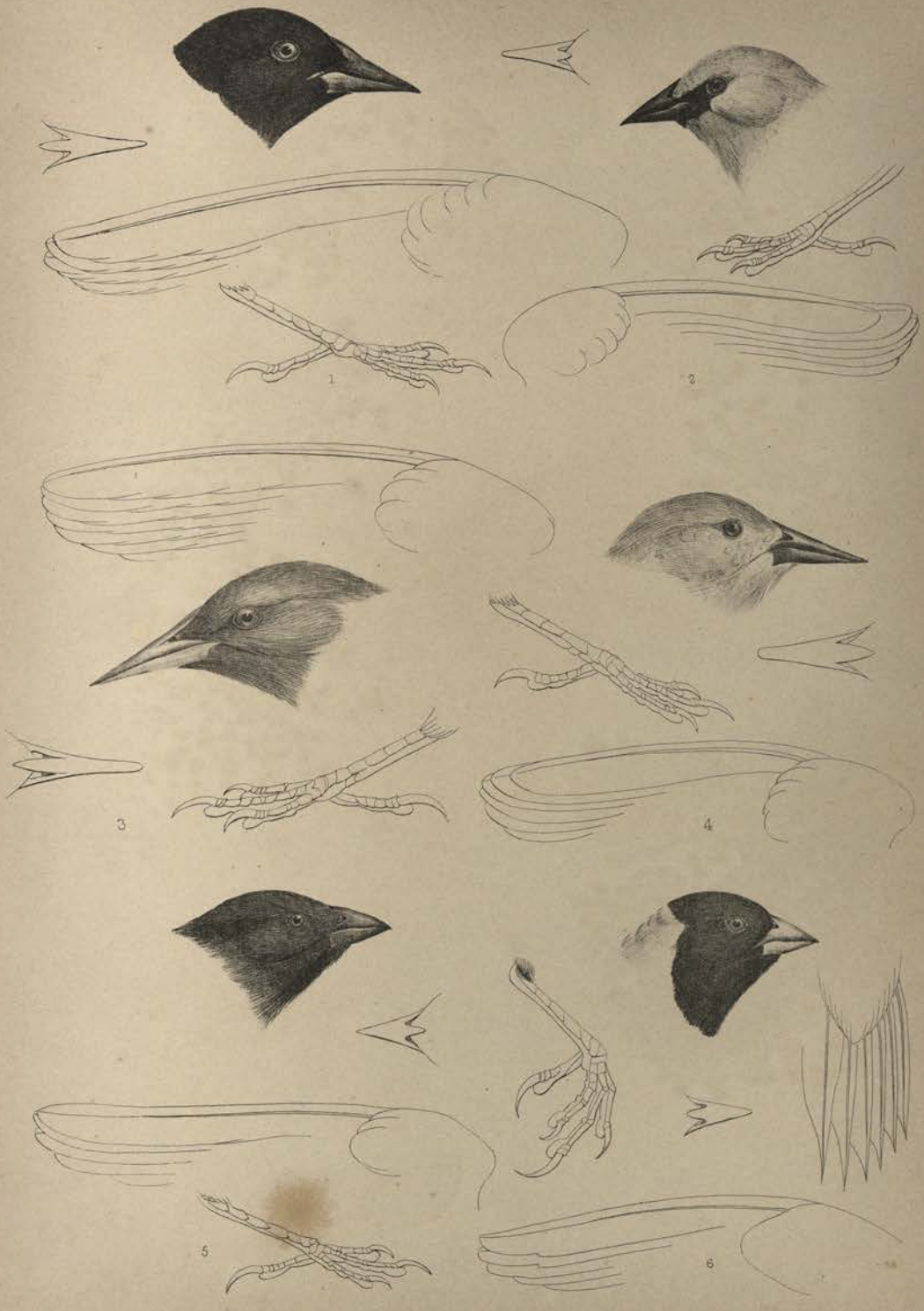
Y. *Baltimore* (Linn.) Vieill. Pl enl. 506. f. 1., Wils. Amer. Orn. pl. 1. f. 3., and pl. 53. f. 4. — Icterus minor *Briss.*

* Vieillot established this genus in 1816 (*Analyse*, p. 33.).

J. GOULD'S MOST TESTIMONIAL.

Hullmandel's Patent Lithotint.

CHRYSOMUS
frontalis. (Vieill.)



1 AGELAIUS phœniceus. 2 CHRYSOMUS icterocephalus. 3 LEISTES viridis.
4 AMBLYRHAMPHUS holosericeus. 5 MOLOTHRUS pecoris. 6 DOLICHONYX oryzivorus.

The seventh Subfamily,

AGELAINÆ, or TROOP-BIRDS,

have the Bill the length of the head or shorter, completely conical, with the sides gradually compressed towards the tip; the culmen straight, flattened, and more or less broad; the Tarsi usually the length of the middle toe; the Toes lengthened, slender, and the outer united at the base with the middle one; the hind toe long; and all armed with long, rather curved Claws.

MOLOTHRUS *Swains.**

Bill very short, conical, with the culmen not flattened, but slightly arched from the base, where it is elevated and advanced on the forehead; the nostrils lateral, basal, and partly covered by a membrane and projecting plumes. *Wings* lengthened and pointed, with the first and second quills the longest. *Tail* moderate, and slightly rounded on the sides. *Tarsi* the length of the middle toe, and strongly scutellated. *Toes* long, the lateral ones equal; and the claws small and fully curved.

They migrate from the very far north to the south, according to the season; at which time they are seen in small parties, resting on the tops of the trees, near streams, or along creeks and banks of rivers. When seeking their food, they frequent corn and rice fields; but are commonly observed accompanying the cattle, and are often seen on their backs. They feed on the seeds, worms, &c., which they pick up amongst the fodder, and from the excrements of the cattle, which they scratch up for the purpose. The female of this species has the most remarkable habit of dropping her eggs, singly, into the nests of other birds, instead of building a nest, and hatching for herself; thus entirely abandoning her progeny to the care and mercy of strangers.

1. M. *pecoris* (Gmel.) Swains. Wils. Amer. Orn. pl. 18. f. 1, 2, 3. — Icterus emberizoïdes *Daud.*; Sturnus junceti *Lath.*; Oriolus fuscus et Sturnus obscurus *Gmel.*
2. M. *brevirostris* Swains. Two Cent. and a Quarter, p. 305.
3. M. *bonariensis* (Gmel.) Pl. enl. 710. — Icterus niger *Daud.*; Passerina discolor *Vieill.*; Icterus sericeus *Licht.*; Ict. minor *Spix*, Av. Bras. t. 62. f. 2.; Ict. maxillaris *D'Orb. & Lafr.*; Ict. fringillaris *Spix*, Av. Bras. t. 65. ?

AGELAIUS *Vieill.*†

Bill more or less lengthened, the culmen broad and flattened near the base, where it advances on the forehead, the sides gradually compressed towards the tip, which is rather pointed, the lateral margins of both mandibles inflexed; the nostrils basal and lateral. *Wings* moderate, with the first quill rather shorter than the second and third, which are the longest. *Tail* lengthened and rounded. *Tarsi* nearly the length of the middle toe. *Toes* long and slender, the lateral ones equal; the claws long, slender, and slightly curved.

* Established by Mr. Swainson (*Fauna Boreali-Americana*, p. 494.) in 1831.
† Established by Vieillot (*Analyse, &c.*, p. 33.) in 1816.

These birds are peculiar to the continent of America. The North American species is migratory, and is found during winter in the Southern States, in immense flocks, particularly near the sea coast, and in the vicinity of large rice and corn fields. Wilson observes that he has frequently been entertained with their aërial evolutions. Sometimes they appeared driving about like an enormous black cloud carried before the winds, varying its shape every moment; sometimes suddenly rising from the fields around him with a noise like thunder, then descending like a torrent, and covering the branches of some detached grove or clump of trees, the whole congregated multitude commenced one general concert or chorus, which he has plainly distinguished at the distance of more than two miles. They arrive in Pennsylvania in the beginning of March in immense flocks, and commence their devastations on the grub-worms, caterpillars, and various other larvæ; for these they search in the ground, at the roots of plants, in orchards and meadows, as well as among buds, leaves, and blossoms; and, from their known voracity, the multitudes of these insects which they destroy must be immense. During the months of August and September, they pour down on the low countries near the coast in prodigious multitudes, wheeling and driving over the meadows and devoted corn fields, darkening the air with their numbers. Then commences the work of destruction on the corn, till little is left for the industrious husbandmen; and on the seeds of the reeds or wild oats, with a profusion of other plants, that abound along the banks of the great rivers. In the month of April, they separate in pairs, and begin to construct their nests, which are generally built in a marsh or swampy meadow, or other like watery situations: the spot, usually a thicket of alder bushes, at the height of six or seven feet from the ground; sometimes in a detached bush, in a meadow of high grass; often in a tussock of rushes or coarse rank grass; and not unfrequently on the ground. When in a bush, the nest is generally composed outwardly of wet rushes picked from the swamp, and long tough grass in large quantity, and well lined with very fine bent. The rushes forming the exterior are generally extended to several of the adjoining twigs, round which they are repeatedly and securely twisted; a precaution absolutely necessary for its preservation, on account of the flexible nature of the bushes in which it is placed. The same caution is observed when a tussock is chosen, by fastening the tops together, and intertwining the materials of which the nest is formed with the stalks of rushes around. When placed on the ground, less care and fewer materials being necessary, the nest is much simpler and slighter. The female lays five eggs.

1. A. *phœniceus* (Linn.) Vieill. Pl. enl. 402. — Icterus pterophœniceus *Briss.*; Sturnus predatorius *Wils.* Amer. Orn. pl. 30. f. 1, 2.; Oriolus melancholicus var. *β*, Lath. Pl. enl. 448.
2. A. *tricolor* Audub. B. of Amer. pl. 388. f. 1.
3. A. *gubernator* (Wagl.) Pr. Bonap. Isis, 1832. 281.
4. A. *bicolor* (Vieill.) N. Dict. Hist. Nat. xxxiv. *535.*
5. A. *cyanopus* (Vieill.) N. Dict. Hist. Nat. xxxiv. *552.* — Icterus tanagrinus *Spix,* Av. Bras. t. 64. f. 1., Azara No. 71.
6. A. *curæus* (Mol.) — Icterus sulcirostris *Spix,* Av. Bras. t. 64. f. 2.; Agelaius Chopi *Vieill.*; Icterus unicolor *Licht.* Azara No. 62.
7. A. *? melancholicus* (Linn.) Edwards's Birds, pl. 85.
8. A. *pyrrhopterus* (Vieill.) N. Dict. Hist. Nat. xxxiv. *543.*, Azara No. 74., Voy. l'Ile de Cuba, Ois. t. 20. — Leïstes humeralis *Vigors.*
9. A. *pustulatus* Swains. Two Centuries and a Quarter, p. *303.*
10. A. *longipes* Swains. Phil. Mag. 1827. p. 436. — Icterus persicillatus *Licht.* Isis, 1829. *753.*
11. A. *æneus* (Licht.) Isis, 1829. *758.*
12. A. *virescens* (Vigors), Zool. Journ. No. xi. p. 441. — Psarocolius melanopsis *Wagl.*
13. A. *aterrimus* (Kittl.) Vogel von Chili, t. 2. — Leïstes niger *Swains.*
14. A. *unicolor* (Swains.) Two Centuries and a Quarter, p. 304.
15. A *brevirostris* (D'Orb. & Lafr.) Syn. Av. pt. ii. p. 7.
16. A. *xanthocephalus* (Pr. Bonap.) Swains. — Icterus icterocephalus *Pr. Bonap.* Amer. Orn. pl. 3. f. 1, 2.

Leïstes *Vigors.**

Bill more or less long, culmen straight and flattened, with the base advancing on the forehead in a point, the sides compressed gradually to the tip, which is rounded; the gonys lengthened and advancing upwards; the nostrils basal, lateral, and membranous. *Wings* long and pointed, with the three first quills nearly equal and longest. *Tail* moderate and rounded. *Tarsi* shorter than the middle toe, and covered with broad scutellations. *Toes* lengthened, with the lateral ones unequal, and strongly scaled above; the claws long and rather curved.

* Established by Vigors (*Zoological Journal*, ii. 191.) in 1825.

It is in marshy places, on the borders of the great rivers of South America, that these birds are generally seen, perched on the low trees or reeds, and sometimes on the ground. The nest is suspended among the reeds at a short distance from the ground, and is made entirely of stalks of grass. The female deposits three or four eggs.

1. L. *viridis* (Gmel.) Pl. enl. 236. f. 1. — Agelaius Guirahuro *Vieill.*; Xanthornus Gasqueti *Quoy et Gaim.* Voy. de l'Uranie, Ois. t. 24.; Icterus dominicensis *Licht.*; Leïstes Suchii *Vigors*, Zoological Journal, ii. pl. Suppl. 10.; L. orioloïdes *Swains.* Azara No. 64.
2. L. *americanus* (Linn.) Vigors, Pl. enl. 236. f. 2.; Agelaius militaris *Vieill.*; Tanagra militaris *Gmel.*; Oriolus guianensis *Linn.* Pl. enl. 536., Azara No. 70.
3. L. *anticus* (Licht.) Cat. Dupl. Berl. Mus. No. 182. — Agelaius virescens *Vieill.* Azara No. 65.
4. L. *brevirostris* Swains. Two Cent. and a Quarter, p. 304.
5. L. *tenuirostris* Swains. Two Cent. and a Quarter, p. 304.

Amblyrhamphus *Leach.**

Bill as long as the head, with the culmen straight, broad, and much flattened above from the base (where it advances on the forehead) to the tip, which is rounded; the lateral margins straight, but angulated at the base; the gonys lengthened, straight, and advancing upwards to the end; the nostrils basal, lateral, and partly concealed both by a membrane and projecting plumes. *Wings* moderate, with the first quill shorter than the second, and the second rather shorter than the third, fourth, and fifth, which are the longest. *Tail* moderate and rounded. *Tarsi* the length of the middle toe. *Toes* lengthened with the lateral ones unequal, and the hind toe nearly as long as the tarsus; all armed with long and slightly curved claws.

This species frequents marshy places in flocks. It is more solitary than those of the other genera of the family. "Seated," says Mr. Darwin, "on a twig, with its beak widely open, it often makes a shrill, but plaintive and agreeable cry, which is sometimes single and sometimes reiterated. Its flight is heavy."

A. *holosericeus* (Scop.) Sonn. Voy. p. 113. t. 68. — Oriolus ruber *Gmel.*; Amblyrhamphus bicolor *Leach*, Zool. Misc. pl. 36.; Sturnus pyrrhocephalus *Licht.*; Leïstes erythrocephalus *Swains.*; Sturnella rubra *Vieill.* Azara No. 73.

Chrysomus *Swains.*†

Bill nearly the length of the head, with the culmen straight but not flattened, the lateral margins slightly sinuated and inflexed on both mandibles; the nostrils basal and lateral, with the opening small. *Wings* moderate, with the first quill shorter than the second, which is rather shorter than the third and fourth; these are the longest. *Tail* moderate and rounded. *Tarsi* as long as the middle toe, and slender. *Toes* long and slender, with the lateral ones equal; the claws long, very slender, and slightly curved.

Little is yet known of the habits of these species, except that they prefer marshy places, like most others of this subfamily.

1. C. *icterocephalus* (Linn.) Swains. Pl. enl. 343.
2. C. *frontalis* (Vieill.) N. Dict. Hist. Nat. liv. 536. — Agelaius ruficapillus *Vieill.*; A. ruficollis *Swains.*
3. C. *? flavus* (Gmel.) Voy. of Beagle, Birds, pl., Sonn. Voy. t. 69. — Psarocolius flaviceps *Wagl.* Syst. Av. sp. 9.; Chrysomus xanthopygius *Swains.*

* Established by Leach (*Zoological Miscellany*) in 1814.
† Established by Mr. Swainson (*Class. of Birds*, ii. 274.) in 1837.

Dolichonyx *Swains.**

Bill very short, conical, the culmen elevated and nearly straight to the tip; the sides gradually compressed; the lateral margins sinuated; the gonys lengthened and advancing upwards; the nostrils basal, lateral, covered with a membrane, and having the opening anteriorly. *Wings* moderate, pointed, with the first and second quills equal and longest. *Tail* slightly graduated, with the points of the feathers laterally acuminated and rigid. *Tarsi* as long as the middle toe, and slender. *Toes* very long and slender; the lateral ones unequal, the inner the longest, the hind toe nearly equalling the length of the tarsus; and all armed with long, very slender, and slightly curved claws.

They are peculiar to the continent of America and the West Indies. Wilson informs us that the winter residence of these birds is supposed to be from Mexico to the mouth of the Amazons, whence, in hosts innumerable, they regularly issue every spring, extending their migrations northwardly, as far as 54° N. They appear in the lower parts of Pennsylvania about the 12th of May; while there, the males are extremely gay and full of song, frequenting meadows, newly ploughed fields, the sides of creeks, rivers, and watery places, feeding on may-flies and caterpillars, of which they destroy great quantities. In their passage, however, through Virginia at this season, they do great damage to the early wheat and barley while in its milky state. About the 20th of May, they disappear on their way to the north, where they remain during the summer, building and rearing their young. In the month of June, the colour of the male begins to change, gradually assimilating to that of the female, and before the beginning of August it is difficult to distinguish the one from the other. Insects of various kinds, grubs, may-flies, and caterpillars, the young ears of Indian corn, and the seeds of reeds or wild oats, furnish them with such abundance of nutritious food, that in a short time they become extremely fat. The nest is fixed on the ground, generally in a field of grass; the outside is composed of dry leaves and coarse grass; the inside is lined with fine stalks of the same, laid in considerable quantity. The female lays five eggs. The song of the male, while the female is sitting, consists of a jingling medley of short variable notes, uttered with such seeming confusion and rapidity, and continued for such a considerable time, that it appears as if half a dozen birds of different kinds were all singing together.

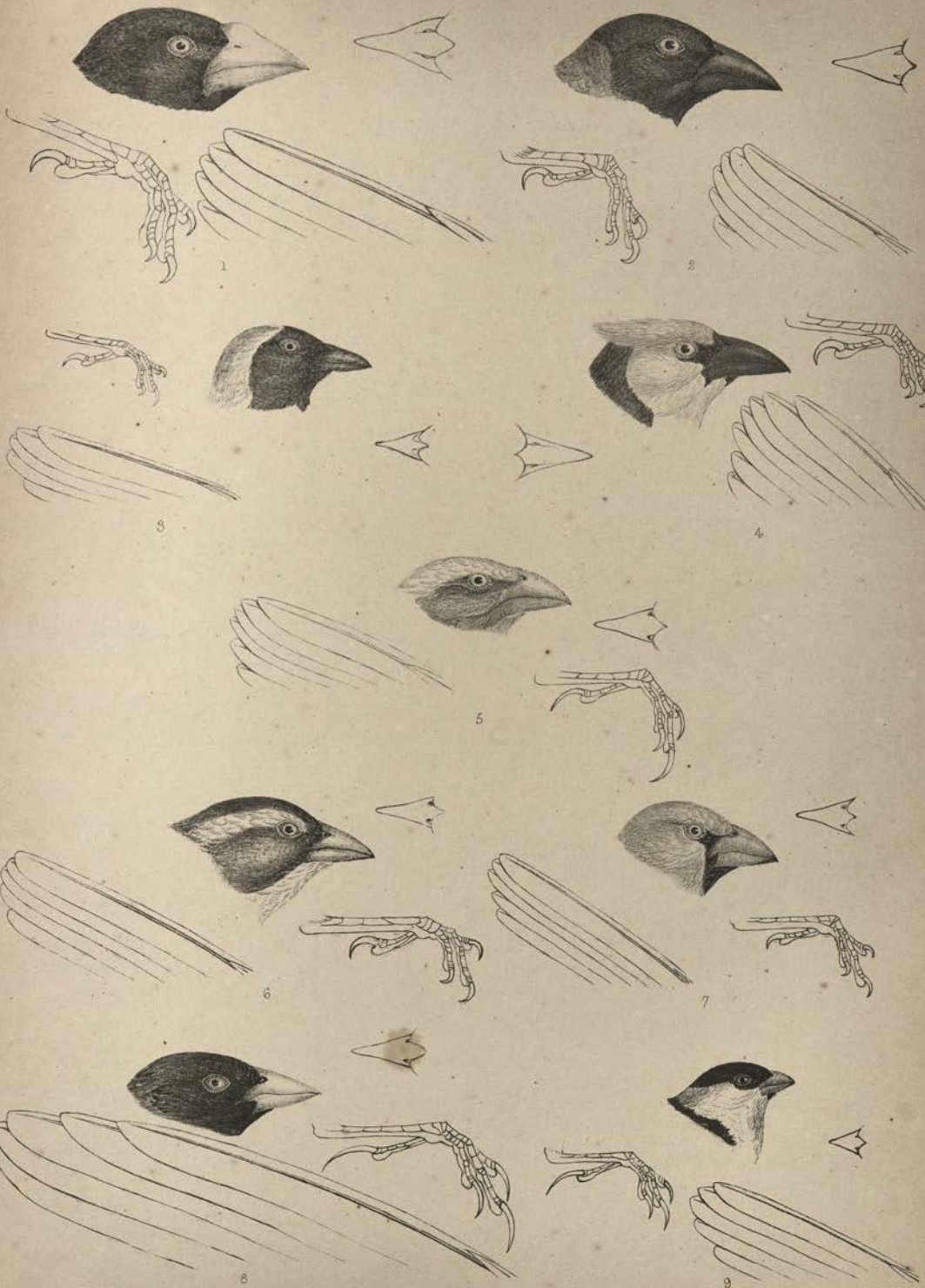
1. D. *oryzivorus* (Linn.) Swains. Wils. Amer. Orn. pl. 12. f. 1,
2. — Icterus agripennis *Pr. Bonap.* Pl. enl. 388.

2. D. ? *rufescens* (Vieill.) N. Dict. Hist. Nat. xxv. 25.

* Established by Mr. Swainson (*Zool. Journ.* iii. p. 351.) in 1827.

SYCOBIUS
nitens. Gray.

TEXTOR
dinemelli ♀ Horsf.



1 TEXTOR alecto
2 HYPHANTORNIS textor
3 NIGRITA canicapilla
4 SYCOBIUS cristatus
5 PLOCEUS philippinus
6 PLOCEPASSER mahali
7 PHILETÆRUS socius
8 CHERA progne
9 VIDUA principalis

C.Bullmandel's Patent Lithotint.

The fourth Family,

FRINGILLIDÆ, or FINCHES,

contains a numerous series of small, and for the most part showy, birds, that have the Bill short, thick, strong, and more or less conic, without emargination at the tip, but generally angular and thick at the base.

The first Subfamily,

PLOCEINÆ, or WEAVERS,

have the Bill strong and conic, with the culmen projecting on the forehead and arched to the tip, which is entire; the Wings somewhat rounded, with the first quill remarkably short; the Legs and Toes robust, and strongly scaled; and the hind toe strong, and nearly as long as the middle toe.

TEXTOR *Temm.**

Bill more or less long, conic, broad at its base, laterally compressed, with the basal portion of the culmen advancing on the forehead (in some seasons swollen), and curved towards the tip; the lateral margins sinuated, and the gonys long and ascending; the nostrils basal, lateral, naked, and pierced in the substance of the bill. *Wings* somewhat rounded, and reaching a little beyond the base of the tail; with the first quill very short, and the second nearly equalling the third and fourth, which are the longest. *Tail* moderate, and rather rounded. *Tarsi* equal in length with the middle toe, robust, and strongly scaled. *Toes* short and strongly scaled, the lateral toes equal, the hind toe equalling the inner, and the claws strong and curved.

Inhabitants of Africa, both North and South, and always found in company with buffaloes, on whose backs they are seen perched, seeking the insects, &c., that live thereon. They also perform the important office of a sentinel while these animals are feeding; and, if the herd are put to the rout, always follow it.

1. T. *Alecto* Temm. Pl. col. 446.—Dertroïdes albirostris *Swains.*
2. T. *erythrorhynchus* A. Smith, Ill. S. Afr. Zool. pl. 64.—Bubalornis niger *A. Smith.*
3. T. *dinemelli* Horsf.—Rüpp. Syst. Uebers. Nord-Ost-Afr. t. 30.

* The exact date of this genus is unknown, but it was certainly proposed long before 1831, when M. Lesson established his *Alecto:* it must be anterior also to *Bubalornis* A. Smith (1836) and *Dertroïdes* of Mr. Swainson (1837).

Hyphantornis.*

Bill as long as, or shorter than, the head, broad at the base, laterally compressed to the tip, with the culmen broad, smooth, and rounded, advancing to a point on the forehead, and the lateral margins slightly angulated at the base, and straight towards the tip; the nostrils basal, exposed, oval, and pierced in the substance of the bill. *Wings* reaching a little beyond the base of the tail; the first quill very short; the second equalling the sixth; the third, fourth, and fifth of nearly equal length, but the fourth rather the longest. *Tail* rather short, even or slightly rounded at the end. *Tarsi* as long as the middle toe. *Toes* strong, the lateral toes equal in length; and the claws strong and much curved.

Inhabiting the vast continent of Africa, living more or less in society on trees, in the neighbourhood of marshes and rivers. Their food consists of seeds and coleopterous insects. As the breeding season advances, they generally congregate in flocks, and suspend their nests from the branches overhanging and nearly touching the water. These are formed of coarse grass, and so substantially constructed, that each requires a long time for its completion; their forms vary with the species, some are kidney-shaped, others like a retort, &c. The females generally lay three or four eggs.

1. H. *textor* (Gmel.) Pl. enl. 375. and 376.—Fringilla velata *Licht.* Swains. Zool. Ill. n. s. t. 37.; Loxia melanocephala *Gmel.*; Ploceus senegalensis *Steph.*
2. H. *grandis.*—Ploceus collaris *Fras.* Proc. Z. S. 1842. 142.
3. H. *larvata* (Rüpp.) Faun. Abyss. t. 32. f. 1.—Loxia abyssinica? *Gmel.*
4. H. *velata* (Vieill.) Ency. Méth. 701.—Ploceus personatus Swains. Two Cent. and a Quart. 306.
5. H. *capitalis* (Lath.) Lath. Syn. pl. 112.
6. H. *gutturalis* (Vigors), Proc. Z. S. 1831. 92.
7. H. *spilonota* (Vigors), Proc. Z. S. 1831. 92., A. Smith, Ill. S. Afr. Zool. pl. 66. f. 1.—Ploceus stictonotus *A. Smith*; Ploceus flaviceps *Swains.* B. of W. Afr. pl. 32.
8. H. *ocularia* (A. Smith), Proc. S. Afr. Inst., Ill. S. Afr. Zool. pl. 30. f. 2.
9. H. *brachyptera* (Swains.) B. of W. Afr. pl. 10.
10. H. *cucullata* (Swains.) Two Cent. and a Quart. 307.
11. H. *Galbula* (Rüpp.) Faun. Abyss. t. 32. f. 2.
12. H. *flavocapilla* (Vieill.) Ency. Méth. 698.
13. H. *collaris* (Vieill.) Ency. Méth. 699.
14. H. *vitellina* (Licht.) Cat. Dupl. Berl. Mus. No. 237.
15. H. *personata* (Vieill.) Gal. des Ois. t. 84.—Ploceus melanotis *Swains.*
16. H. *aurocapilla* (Swains.) Two Cent. and a Quart. 346.
17. H. *aurèoflava* (A. Smith), Ill. S. Afr. Zool. p. .
18. H. *subaurea* (A. Smith), Ill. S. Afr. Zool. pl. 30. f. 1.—Ploceus tahatahi *A. Smith.*?
19. H. *aurifrons* (Temm.) Pl. col. 175, 176.—Ploceus icterocephalus *Swains.*
20. H. *capensis* (A. Smith), Ill. S. Afr. Zool. pl. 66.—Ploceus abyssinicus *Cuv.*
21. H. *aurantia* (Vieill.) Ois. Chant. pl. 44.
22. H. *chrysogastra* (Vigors), Proc. Z. S. 1831. 92.
23. H. *rubiginosa* (Rüpp.) Faun. Abyss. pl. 33. f. 1.
24. H. *melanotis* (Lafr.) Mag. de Zool. 1839. pl. 7.
25. H. *castaneofusca* (Lafr.) Rev. Zool. 1840. 99.
26. H. *isabellina* (Lafr.) Rev. Zool. 1840. 226.
27. H. *Guerini.*—Ploceus melanotis *Guer.* Rev. Zool. 1843. 321.
28. H. *mariquensis* (Smith), Ill. Zool. S. Afr. Birds, pl. 103.
29. H. *flavoviridis* (Rüpp.) Syst. Uebers. Vog. Nord-Ost-Afr. t. 29.
30. H. *erythrocephalus* (Rüpp.) Syst. Uebers. Vog. Nord-Ost-Afr. p. 71.
31 H. *intermedia* (Rüpp.) Syst. Uebers. Vog. Nord-Ost-Afr. p. 71.
32. H. *flavigula* Hartl. Rev. Zool. 1845. p. 406.
33. H. *modesta* Hartl. Rev. Zool. 1845. p. 406.

Sycobius *Vieill.*†

Bill as long as the head, with the culmen and the lateral margins curved, the latter very slightly sinuated; the nostrils basal, exposed, and rounded. *Wings* moderate, and somewhat rounded; with the

* This name is established in the place of *Ploceus*, as improperly given to this genus by modern authors, but which I have employed in its proper place as applied by the author of the genus.

† Established by Vieillot in (*Analyse*, p. 33.) 1816, in the place of *Malimbus*, which he had proposed in 1805; in 1820 he added a third name *Ficophagus*. Mr. Swainson, in 1837, gave the name of *Symplectes*; and in the same year Sir W. Jardine published *Eupodes*. These are coequal with the above.

first quill very short, the second equalling the eighth, the third longer than the seventh, and the fourth and fifth of equal length. *Tail* moderate, and even or slightly rounded. *Tarsi* robust and strongly scaled. *Toes* moderate, with the inner toe shorter than the outer, and the claws strong and curved, especially that of the hind toe.

The birds of this division are peculiar to the western and southern portions of Africa.

1. S. *cristatus* Vieill. Ois. Chant. pl. 42.—Tanagra malembica *Daud.*, Ann. du Mus. i. p. 148. t. x.; Ploceus cristatus *Vieill.*
2. S. *rubricollis* (Swains.).—Malimbus cristatus ♀ *Vieill.* Ois. Chant. pl. 43.
3. S. *nigerrimus* (Vieill.) Ency. Méth. 700.—Ploceus niger *Swains.* ?
4. S. *nigricollis* (Vieill.).—Malimbus nigricollis *Vieill.* Ois. Chant. pl. 45.
5. S. *collaris* (Gray), Zool. Misc. 1. p. 6.
6. S. *nitens* (Gray), Zool. Misc. 1. p. 7.
7. S. *bicolor* (Vieill.) Ency. Méth. 698.—Symplectes chrysomus *Swains.* B. of W. Afr. 1. 170.; Eupodes xanthosomus *Jard. & Selby*, Ill. Orn. n. s. pl. 10.
8. S. *gregalis* (Licht.) Cat. Dupl. Berl. Mus. No. 234.
9. S. *St. Thomæ* Hartl. Rev. Zool. 1848. p. 109.

Ploceus *Cuv.**

Bill short, thick at the base, pointed at the tip, laterally compressed; with the culmen smooth, rounded, and advancing on the forehead in a point; the lateral margins slightly sinuated and angulated at the base, and the gonys lengthened and ascending upwards; the nostrils basal, rounded, and partly hidden by the frontal plumes. *Wings* moderate, with the first quill very short, the second shorter than the third, the third to the fifth longest, and the tertials nearly the length of the quills. *Tail* moderate, with the end even or slightly rounded. *Tarsi* as long as, or longer than, the middle toe. *Toes* moderate, the inner toe shorter than the outer; and the claws long, slender, slightly curved, and compressed.

India and Africa are the countries of these birds, where they are generally found among the trees near the banks of rivers. During the summer they are very destructive to gardens, feeding on seeds, rice, and small fruits. The sexes differ much in colour, the males during the breeding season becoming of rich and bright plumage. Some seek the reeds which margin the streams, and other trees that overhang rivers or wells (in India), in order to suspend their curiously woven nests.

1. P. *philippinus* (Linn.) Cuv. Pl. enl. 135. f. 2.—Euplectes philippensis *Swains.*
2. P. *Baglefecht* (Vieill.) Ency. Méth. 698.—Loxia philippina var. *Lath.*
3. P. *bengalensis* (Linn.) Pl. enl. 293. f. 2.—Loxia regina *Bodd.*; Euplectes albirostris *Swains.*
4. P. *manyar* (Horsf.) Linn. Trans. xiii. 160.—Euplectes flaviceps *Swains.*; E. striatus *Blyth.*
5. P. *nelicourvi* (Scop.) Sonn. Voy. Ind. t. 22.—Loxia pensilis *Gmel.*
6. P. *luteolus* (Licht.) Cat. Dupl. Berl. Mus. p. 23.
7. P. *jonquillaceus* Vieill. Ency. Méth. 700.; Guér. Iconogr. Règn. An. t. 187. f. 8.
8. P. *capensis* (Linn.) Pl. enl. 101. 659. f. 1.—Icterus flavescens *Daud.*; Fringilla phalerata *Ill.* Licht.
9. P. *xanthomelas* (Rüpp.) Rüpp. Faun. Abyss. p. 94.; Syst. Uebers. Vog. Nord-Ost Afr. t. 28.
10. P. *abyssinicus* (Gmel.) Cuv., Vieill. Ois. Chant. t. 28.—Fringilla ranunculacea *Licht.*
11. P. *afer* (Gmel.) Brown's Ill. t. 24. f. .—Loxia melanogastra *Lath.*
12. P. *taha* A. Smith, Ill. S. Afr. Zool. pl. 7.—Ploceus melanocephalus? *Vieill.*; Pl. dubius *A. Smith.*
13. P. *textrix* (Gmel.) Licht. Cat. Dupl. Berl. Mus. p. 24.—Textor malimbus *Temm.*; Ploceus fasciatus *Steph.*
14. P. *oryx* (Linn.) Pl. enl. 6. f. 2. 309. f. 2., Vieill. Ois. Chant. t. 66.
15. P. *franciscanus* (Isert), Planches enluminées, 134. f. 1.—Fringilla ignicolor *Vieill.* Ois. Chant. t. 59., Ehrenb. Symb. Phys. t. 2.

* Proposed by Cuvier (*Règne Animal*, 1st edit. p. 406.) in 1817. In 1831 M. Lesson gave the division the name of *Oryx*, while in 1832 two other names were established, viz. *Pyromelana* of the Prince of Canino and *Euplectes* of Mr. Swainson.

16. P. *rufovelatus* (Fras.) Proc. Z. S. 1842. 142.
17. P. *flammiceps* (Swains.) B. of W. Afr. p. 13.
18. P. *ruficeps* Swains B. of W. Afr. p. 262.
19. P. *erythrocephalus* (Gmel.) Cuv., Brown's Ill. t. 28. f. 2., Vieill. Ois. Chant. t. 28.
20. P. *madagascariensis* (Linn.) Vieill. Ois. Chant. t. 63.
21. P. *ruber* (Gmel.) Pl. enl. 134. f. 2.
22. P. *sanguinirostris* (Linn.) Edwards's Birds, t. 271. f. 2.—Emberiza quelea *Linn.* Pl. enl. 183. f. 2. 223. f. 1., Vieill. Ois. Chant. 22, 23, 24.
23. P. *aureus* (Gmel.) Brown's Ill. t. 25. f. 1.—Euplectes aurinotus *Swains.*
24. P. *lepidopterus* Licht. Verz. Afric. Thier. p. 15.
25. P. *erythrops* Hartl. Rev. Zool. 1848. p. 109.
26. P. *Petiti* O. Des Murs, Rev. Zool. 1846. p. 242.
27. P. *nigroventris* Cassin, Proc. Acad. Philad. 1848. p. 66.

Philetærus *A. Smith.**

Bill more compressed than in Ploceus, with the culmen slightly arched from the base, and the lateral margins sinuated. *Wings* moderate, reaching to about the middle of the tail; with the first quill very short, almost rudimentary; the second, third, and fourth nearly of equal length and longest. *Tail* somewhat rounded at the end. *Tarsi* strong, shielded with transverse scales. *Toes* moderate, the outer and inner toes nearly of equal length; claws much curved and acute.

Peculiar to South Africa, where they are generally found near rivers; their food consists of seeds and small insects.

"The most striking peculiarity observed in the species," says Dr. Smith, "is the extraordinary manner in which a number of individuals associate, and build their nests under a common roof. When a nestling-place has been selected, and the operation of building the nests is to be commenced *ab initio*, the community immediately proceed conjointly to construct the general covering which interests them all. That being accomplished, each pair begin to form their own nest, which, like the roof, they construct of coarse grass: these are placed side by side against the under surface of the general covering; and, by the time they are all completed, the lower surface of the mass exhibits an appearance of an even horizontal surface, freely perforated by small circular openings.

"They never use the same nests a second time, though they continue for many years attached to the same roof. With the return of the breeding-season, fresh nests are formed upon the lower surface of those of the previous year, which then forms an addition to the general covering. In this manner they proceed, year after year adding to the mass, till at last the weight often becomes such as to cause the destruction of its support, upon which a new building-place is selected. Each female lays from three to four eggs. The male has no summer tints which he throws aside in winter."

Ph. *socius* (Lath.) G. R. Gray, Paters. Voy. pl. 19.—Philetærus lepidus *A. Smith*, Ill. S. Afr. Zool. pl. viii.; Ploceus Patersoni *Less.*

Nigrita *Strickl.*†

Bill shorter than the head, dilated at the base, laterally compressed to the tip, which is slightly emarginated; the lateral margins inflexed and slightly arched; the culmen rather keeled, gradually arched from the base to the tip, and the gonys lengthened and ascending; the nostrils basal, ovate, and partly concealed by the frontal plumes. *Wings* moderate, rounded, with the first quill spurious, and the third to the fifth nearly equal. *Tail* rather short, and rounded. *Tarsi* short and strongly scaled, equalling

* This genus was founded in 1837. See *Loud. Mag. of Nat. Hist.* p. 536.

† This genus was originally proposed (*Proc. Zool. Soc.* 1841, p. 30.) under the name of *Æthiops;* but, as that word had been previously used, Mr. Strickland changed it to the above.

the length of the middle toe. *Toes* moderate, the lateral toes nearly equal, the hind toe long and strong; the claws rather short, much curved, and grooved on the sides.

Peculiar to Western Africa.

1. N. *canicapilla* Strickl. Proc. Z. S. 1841. 30.
2. N. *fusconota* Fras. Proc. Z. S. 1842. 145. Zool. Typ. pl. .

Plocepasser *Smith.**

Bill large, conical, pointed, and laterally compressed; the culmen slightly arched, advanced on the forehead in a point. *Wings* moderately long and rounded, with the first quill very short, the second and third equal and longest. *Tail* square at the end, or slightly emarginated. *Tarsi* strong, with distinct shields in front, and entire behind. *Toes* moderate, the outer and inner toes equal; the hinder one slightly shorter, but stronger, the middle one much the longest; claws strong and curved.

The birds of this genus are peculiar to North and South Africa, where they appear to live in flocks on the margins of the streams. Their food consists of seeds and small insects; for these they generally search on the ground. Their nests are formed in society, sometimes twenty or thirty of them being observed on one tree. In form they approach those of the Weavers. "The entire of the walls of each nest," says Dr. Smith, "was composed of stalks of grass, the thickest extremities of which were so placed as to protrude externally for several inches beyond the more compact structure destined to contain the eggs. By this management each appeared armed with numerous projecting spines, and bore considerable resemblance to the body of a porcupine, when its spines are partially erected."

1. Pl. *mahali* A. Smith, Ill. S. Afr. Zool. pl. 65.—Plocepasser melanorhyncus *Rüpp.*
2. Pl. *superciliosus* (Rüpp.) A. Smith, Rüpp. Zool. Atl. pl. 15.
3. Pl.? *pileatus* (Swains.) Two Cent. and a Quart. p. 347.—Type of Leucophrys *Swains.* (1837).

Vidua *Cuv.*†

Bill more or less lengthened, conic, laterally compressed; with the culmen much arched, or nearly straight from the base to the tip, and advancing on the forehead in a point; the lateral margins sinuated or straight, and the gonys lengthened and ascending; the nostrils basal, lateral, mostly hidden by the frontal feathers, and rounded. *Wings* moderate; with the first quill spurious; the second nearly as long as the third; the third, fourth, and fifth nearly equal and longest. *Tail* varying in length, with some of the coverts and tail-feathers considerably lengthened and of various forms. *Tarsi* slender, shorter than the middle toe, covered in front with conspicuously divided scales. *Toes* long and slender, the lateral ones nearly equal, the hind toe as long as the inner, and all armed with long claws.

All the species are from the vast continent of Africa, and are generally found on the trees that grow in the neighbourhood of the rivers. The males undergo a change of plumage, and become like the females during the winter

* Proposed by Dr. A. Smith (*Rep. S. Afr. Exped.* p. 51.) in 1836. Mr. Swainson's *Agrophilus* of 1837 is coequal, and probably *Leucophrys* of the latter author.

† The late Baron Cuvier proposed this division (*Anatomie Comparée*) in 1790 or 1800; and Dr. Rüppel separated some of the species, under the subgeneric appellation of *Coliuspasser*, in 1837.

months. Grain, and especially millet, forms their principal food. The cotton and down of certain plants are used by these birds in the formation of their curiously woven nests.

1. V. *regia* (Linn.) Cuv. Pl. enl. 8. f. 1., Vieill. Ois. Chant. t. 34, 35.
2. V. *principalis* (Linn.) Cuv. Edwards's Birds, pl. 270.—Emberiza vidua *Linn.* Vieill. Ois. Chant. t. 36.; E. serena *Linn.* Pl. enl. 8. f. 2.; Vidua erythrorhyncha *Swains.* B. of W. Afr. pl. 12.
3. V. *superciliosa* (Vieill.) Gal. des Ois. t. 61.
4. V. *paradisea* (Linn.) Cuv. Pl. enl. 194., Vieill. Ois. Chant. t. 37, 38.
5. V. *ardens* (Bodd.) Pl. enl. 647.— Emberiza signata *Scop.* Sonn. Voy. t. 75.; E. payanensis *Gmel.*; Vidua rubritorques *Swains.* B. of W. Afr. p. 174.
6. V. *axillaris* A. Smith, Ill. S. Afr. Zool. pl. 17.
7. V. *macrocerca* (Licht.) Brown, Ill. pl. 11.—Coliuspasser flaviscapulatus *Rüpp.* Pl. enl. 183. f. 1.
8. V. *macroura* (Gmel.).—Loxia longicauda *Lath.*; Fringilla flavoptera *Vieill.* Ois. Chant. t. 41.; F. chrysoptera *Vieill.*; Vidua chrysonota *Swains.*
9. V. *laticauda* (Licht.).—Coliuspasser torquatus *Rüpp.* Faun. t. 36. f. 2.
10. V. *lenocinia* (Less.) Tr. d'Orn. 437.
11. V. *albonotata* Cassin, Proc. Acad. Philad. 1848. p. 65.
12. V. *concolor* Cassin, Proc. Acad. Philad. 1848. p. 66.

Chera.

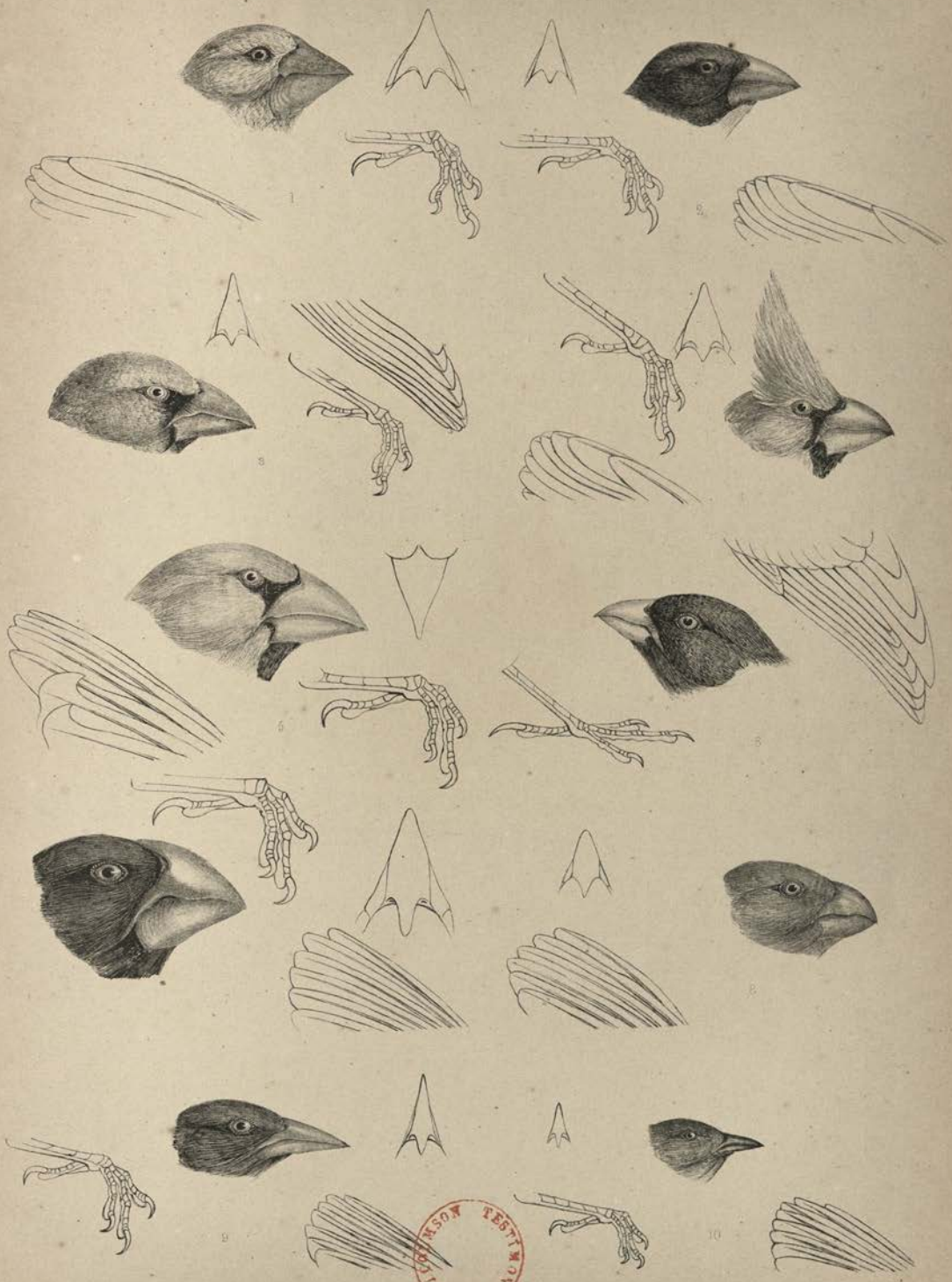
Characters in common with Vidua: but the *Wings* long; with the first quill spurious; the second, third, and fourth slightly graduated; and the fifth and sixth nearly equal, but the fifth the longest. *Tail* and its coverts much lengthened, compressed, and arched.

This active species frequents the marshes and borders of the great rivers of South Africa. The females are said by Barrow, in his "Travels in South of Africa," to have the peculiar habit of living in societies of twenty or thirty, and are in general accompanied by about two males, whose gay plumage becomes sobered like that of the female during the winter months, and is resumed again on the return of summer. The nests are also built in societies of thirty or more together, woven on the stems of reeds. In form they approach very much those of the other species of this subfamily.

C. *Progne* (Bodd.) Pl. enl. 635.—Loxia caffra *Gmel.*; Emberiza longicauda *Gmel.* Mill. Icon. t. iii. A., Vieill. Ois. Chant. t. 39, 40.; Vidua phœnicoptera *Swains.*

March, 1849.

COCCOTHRAUSTES
melanoxanthus Hodg.



LONDESBOROUGH TESTIMONIAL

Hullmandel's Patent Lithotint.

1. PYRENESTES obscura. 2. SPERMOSPIZA hæmatina. 3. GUIRACA cærulea. 4. CARDINALIS virginianus. 5. COCCOTHRAUSTES vulgaris.
6. CALAMOSPIZA bicolor. 7. GEOSPIZA magnirostris. 8. CAMARHYNCUS crassirostris. 9. CACTORNIS scandens. 10. CERTHIDEA olivacea.

The second Subfamily,

COCCOTHRAUSTINÆ, or HAWFINCHES,

have the Bill large, short, strong, conic, and very broad at the base; the culmen and gonys more or less equally curved to the tip; the lateral margins more or less angulated at their base; the Wings lengthened and more or less pointed; the Tail in general short; the Tarsi as long as, or shorter than, the middle toe, robust and strongly scaled; and the hind Toe as long as, or rather shorter than, the inner one, and strong.

SPERMOSPIZA.*

Bill moderate, conic, rather lengthened; upper mandible thicker than the lower, with the sides compressed, the culmen advancing on the forehead and rounded, the lateral margins sinuated and slightly angulated at the base; the gonys lengthened and advancing upwards to the tip; and the nostrils basal, lateral, rounded, and partly concealed by the frontal plumes. *Wings* short, rounded, with the first quill half the length of the second, the second to the sixth graduated, and the latter the longest. *Tail* lengthened, and much rounded. *Tarsi* as long as the middle toe. *Toes* moderate, the lateral ones equal, the hind toe longer than the inner one; all armed with moderate, and curved claws.

The type is peculiar to Western Africa.

S. *hæmatina* (Vieill.) Ois. Chant. pl. 67. — Loxia guttata *Vieill.* Ois. Chant. pl. 68.; Spermophaga cyanorhynchus *Swains.* Jard. and Selby's Ill. Orn. n. s. pl. 11.

PYRENESTES *Swains.*†

Bill very large and strong, perfectly conic; lower mandible rather thicker than the upper; the culmen straight or arched, advancing on the forehead, broad and flattened at the base, the sides compressed; the lateral margin straight, with an obsolete tooth at its base on each side; the gonys of the lower mandible lengthened, and advancing upwards to the tip; the nostrils basal, lateral, rounded, and partly concealed by the frontal plumes. *Wings* moderate, rounded, with the first quill very small, and the fourth and fifth longest. *Tail* lengthened and rounded. *Tarsi* shorter than the middle toe, robust, and strongly scaled. The *Toes* long and robust, the outer ones nearly equal, and the hind toe longer than the outer; all armed with long and curved claws.

They are inhabitants of the forests in the southern and western portions of Africa. Their food consists principally of berries and other small fruits.

1. P. *ostrina* (Vieill.) Vieill. Ois. Chant. t. 48.—P. sanguinea *Swains.*

2. P. *albifrons* (Vigors), Proc. Z. S. 1831. 92.—P. frontalis *Swains.* A. Smith, Ill. S. Afr. Zool. pl. 61, 62.

* The original name of this division was *Spermophaga*, given by Mr. Swainson (*Class. of Birds*, ii. p. 277.) in 1837; but which, having been previously employed, was changed by me to the above in 1840.

† The above generic appellation was given in 1837 by Mr. Swainson (*Class. of Birds*, ii. p. 277.).

Guiraca *Swains.**

Bill large, nearly conical; both mandibles nearly equal in size, the culmen slightly arched to the tip; the sides compressed; the lateral margins nearly straight, but strongly angulated at the base; the gonys lengthened and advancing upwards to the tip; the nostrils basal, lateral, rounded, and partly concealed by the frontal plumes. *Wings* moderate, with the first quill nearly as long as the second, which with the third and fourth are the longest. *Tail* lengthened, and slightly rounded. *Tarsi* as long as the middle toe, robust. The *Toes* long and slender, with the lateral ones unequal, the hind toe as long as the outer one and strong; the claws lengthened and curved.

The species of this genus are peculiar to the continent of America; they are solitary and timid birds, which are generally found near swamps, living on Indian corn, millet, and the kernels of several kinds of fruits. Their notes are extremely clear and mellow.

1. G. *cærulea* (L.) Swains. Wilson's American Ornithology, pl. 24. f. 6.
2. G. *ludoviciana* (L.) Swains. Pl. enl. 153. f, 2. — Loxia rosea *Wils.* Amer. Orn. pl. 17. f. 2.; Coccothraustes rubricollis *Vieill.*; Fringilla punicea *Gmel.*
3. G. *magnirostris* Swains. Class. of Birds, ii. fig. 159. — Loxia angolensis *Linn.* Edwards's Birds, t. 352.
4. G. *Abeillei* Less. Rev. Zool. 1839. 41.
5. G. *tricolor* Less. Rev. Zool. 1839. 102.
6? G. *Regulus* (Shaw), Lev. Mus. ii. pl. p. 45.

Calamospiza *Pr. Bonap.*†

Bill short, robust, compressed; with the culmen slightly convex, and slightly advanced on the forehead; the sides swollen, the lateral margins nearly straight, but angulated at the base; the gonys of the lower mandible angulated and short; and the nostrils basal, oval, and nearly hidden by the frontal plumes. *Wings* moderate, with the third quill the longest. *Tail* moderate and rounded. *Tarsi* moderate and compressed. Lateral *Toes* equal in length; the claws long, arched, and compressed.

Found in America, living in large flocks, and feeding upon the ground. "While the flock," says Mr. Townsend, "is engaged in feeding, the males are frequently observed to rise suddenly to a considerable height in the air, and, poising themselves over their companions, with the wings in constant and rapid motion, they become nearly stationary. In this situation they pour forth a number of very lively and sweetly modulated notes, and at the expiration of about a minute descend to the ground, and course about as before."

C. *bicolor* (Towns.) Pr. Bonap. Audub. B. of Amer. pl. 390. f. 2. 3.

Cardinalis *Pr. Bonap.* ‡

Bill large; both mandibles nearly equal; the culmen advancing on the forehead, rounded and arched to the tip, which is acute; the lateral margins sinuated in the middle; the lower mandible equally strong, with the gonys lengthened, and advancing upwards to the tip; the nostrils basal, lateral, rounded, and partly concealed by the frontal plumes. *Wings* moderate and rounded, with the first five quills graduated, and the fifth the longest. *Tail* lengthened, and rounded at its end. *Tarsi* the length of the middle toe, robust, and strongly scaled. *Toes* long and robust, the lateral ones unequal; claws short and much curved.

* Mr. Swainson established this division (*Phil. Mag.* p. 438.) in 1827; in 1837 he changed the name to *Coccoborus*, but I retain the original word. *Goniaphea* of Bowdich, mentioned in his *Excursions in Madeira* (1825), was probably founded on a species of this genus.

† It was in 1838 (*List of Birds of Europe and N. Amer.*) that the Prince of Canino proposed this genus; in 1839 Mr. Audubon added the synonyme of *Corydalina*.

‡ Proposed by the Prince of Canino in 1838. (*Saggio distr. met. Anim. Vertebr.* p. 53.)

These showy birds are peculiar to the southern parts of North, and the northern parts of South, America. In the Northern States they are migratory; but in the lower parts of Pennsylvania they reside during the whole year, frequenting the borders of creeks and rivulets, in sheltered hollows covered with holly, laurel, and other evergreens. They love also to reside in the vicinity of fields of Indian corn, a grain that constitutes their chief and favourite food. The seeds of apples, cherries, and many other sorts of fruits, are also eaten by them; and they are accused of destroying bees.

Their nests are composed of small twigs, tops of dry weeds, and slips of vine bark, lined with stalks of fine grass. They are generally fixed either on a holly or laurel bush. The female lays four eggs thickly marked all over with touches of brownish olive, on a dull white ground.

1. C. *virginianus* Pr. Bonap. Pl. enl. 37. — Loxia cardinalis *Linn.*
2. C. *Carlsoni* (Daud.) — Loxia cardinalis *Sparr.* Carls. Mus. t. 41.; Loxia fulgens *Less.*
3. C. *phœniceus* Gould, Proc. Z. S. 1837. 111.
4. C. *sinuatus* Pr. Bonap. Proc. Z. S. 1837. 111.
5. C. *carneus* Less. Rev. Zool. 1842. 209.

Coccothraustes *Briss.**

Bill conic, very broad at the base; the culmen slightly arched to the tip, rounded, and smooth; the lateral margins angulated at the base, slightly arched, entire, and inflexed; the lower mandible somewhat smaller than the upper, with the gonys very long, and advancing upwards to the tip; the nostrils basal, lateral, oval, and concealed by the frontal plumes. *Wings* lengthened and acute, the first rather shorter than the second, the second and third the longest. *Tail* short, more or less forked. *Tarsi* shorter than the middle toe. The outer *Toe* somewhat longer than the inner, the hind toe strong; and the claws strong, curved, and acute.

They are found in various parts of Europe, North America, and the northern parts of India, and perform periodical migrations in search of the fruits and seeds on which they feed. The great strength of their bills allows them to break cherry stones, almonds, pecans, &c., for the kernels. It is in the upper branches of trees that they form their nests with great taste, of vegetable fibres and lichen, lined with feathers, &c.; in which they deposit from two to five eggs, of a yellowish grey, spotted and streaked with brown and blackish grey.

1. C. *vulgaris* Briss. Pl. enl. 99. 100. — Loxia Coccothraustes *Linn.*; Coccothraustes europæus *Selby*; Coccothraustes deformis *Koch.*
2. C. *melanurus* (Gmel.) Jard. and Selby's Ill. Orn. pl. 63.
3. C. *vespertinus* (Coop.) Pr. Bonap. Amer. Orn. pl. 15. f. 1. — Coccothraustes Bonapartei *Less.* Ill. Zool. pl. 31.
4. C. *icteroïdes* Vigors, Proc. Z. S. 1830. 8., Gould's B. Him. pl.
5. C. *melanoxanthus* Hodgs. As. Res. xix. 150. — Coccothraustes fortirostris *Lafr.*
6. C. *olivaceus* Fras. Proc. Z. S. 1842. 144.
7. C. *carnipes* Hodgs. As. Res. xix. 150.
8. C. *ferreorostris* Vigors, Zool. Journ. iv. 354. Beechey's Voy. Zool. pl. 8. — Fringilla Papa *Kittl.* Nov. Act. Petersb. pl. 15.

Geospiza *Gould.*†

Bill large, robust, higher at the base than long, with the culmen arched, and much advanced on the forehead into a point; the sides compressed, the lateral margin slightly sinuated and much angulated at the base; the lower mandible very large, broad at the base, with the gonys angulated, and advancing upwards to the tip; and the nostrils basal, and partly covered by the frontal plumes. *Wings* moderate, with the first quill rather shorter than the second, which is the longest. *Tail* very short, and slightly rounded. *Tarsi* strong, rather shorter than the middle toe. *Toes* long, robust, the lateral ones equal; the hind toe longer than the inner, and robust; claws strong and curved.

These birds are peculiar to the Galapagos Archipelago. "They frequent," says Mr. Darwin, "the rocky and extremely arid parts of the land, sparingly covered with almost naked bushes near the coasts; for here they find, by scratching in the cindery soil with their powerful beaks and claws, the seeds of grasses and other plants, which rapidly

* This division was established by Brisson (*Ornithologie*) in 1760.

† Mr. Gould established (*Proc. Zool. Soc.* p. 5.) this genus in 1837; and the following genera were proposed at the same time.

spring up during the short rainy season, and as rapidly disappear. They often eat small portions of the succulent leaves of the *Opuntia galapageia*, probably for the sake of the moisture contained in them," during the dry season. The colonists complain that " they do much mischief, by digging up roots and seeds from a depth of even six inches."

1. G. *magnirostris* Gould, Proc. Z. S. 1837. 5., Voy. Beagle Zool. pl. 36.
2. G. *strenua* Gould, Proc. Z. S. 1837. 5., Voy. Beagle Zool. pl. 37.
3. G. *fortis* Gould, Proc. Z. S. 1837. 5., Voy. Beagle Zool. pl. 38.
4. G. *nebulosa* Gould, Proc. Z. S. 1837. 5.
5. G. *fuliginosa* Gould, Proc. Z. S. 1837. 5.
6. G. *dentirostris* Gould, Proc. Z. S. 1837. 6.
7. G. *parvula* Gould, Proc. Z. S. 1837. 6., Voy. Beagle Zool. pl. 39.
8. G. *dubia* Gould, Proc. Z. S. 1837. 6.

CAMARHYNCHUS *Gould.**

Bill short, less elevated than long, with the culmen slightly keeled, much arched, and advanced on the forehead, the sides much compressed; the lateral margins somewhat sinuated near the middle, and the base angulated; the lower mandible nearly as large as the upper, with the gonys lengthened and equally curved with the culmen, and advancing upwards to the tip. *Wings* moderate and rounded, with the fourth quill the longest.

The birds of this subgenus are found in the same islands, and possess the same habits as the *Geospizæ*.

1. C. *psittacula* Gould, Proc. Z. S. 1837. 6., Voy. Beagle Zool. pl. 40.
2. C. *crassirostris* Gould, Proc. Z. S. 1837. 6., Voy. Beagle Zool. pl. 41.
3. C. *cinerea* (Lafr.) Mag. de Zool. 1843. t. 20.

CACTORNIS *Gould.*

Bill elongate, or nearly as long as the head, acute, compressed, much longer than high; the culmen gradually arched to the tip; the lateral margins slightly arched and angulated at the base; the nostrils basal, and scarcely concealed. *Wings* moderate, with the second, third, and fourth quills nearly equal and longest. *Tail* short and slightly rounded. *Tarsi* as long as the middle toe. The lateral *Toes* unequal; the hind toes strong, and nearly as long as the tarsi; the claws long, and much curved.

Inhabit the islands of Galapagos and Cocos Island. Mr. Darwin informs us that " their most frequent resort is the *Opuntia galapageia*, about the fleshy leaves of which they hop and climb, even with their back downwards, whilst feeding with their sharp beaks both on the fruit and flowers. Often, however, they alight on the ground; and, mingled with the flocks of *Geospizæ*, &c., they search for seeds in the parched volcanic soil."

1. C. *scandens* Gould, Proc. Z. S. 1837. 7., Voy. Beagle Zool. pl. 42.
2. C. *assimilis* Gould, Proc. Z. S. 1837. 7., Voy. Beagle Zool. pl. 43.
3. C. *inornata* Gould, Proc. Z. S. 1843. 104., Voy. Sulphur Zool. pl.

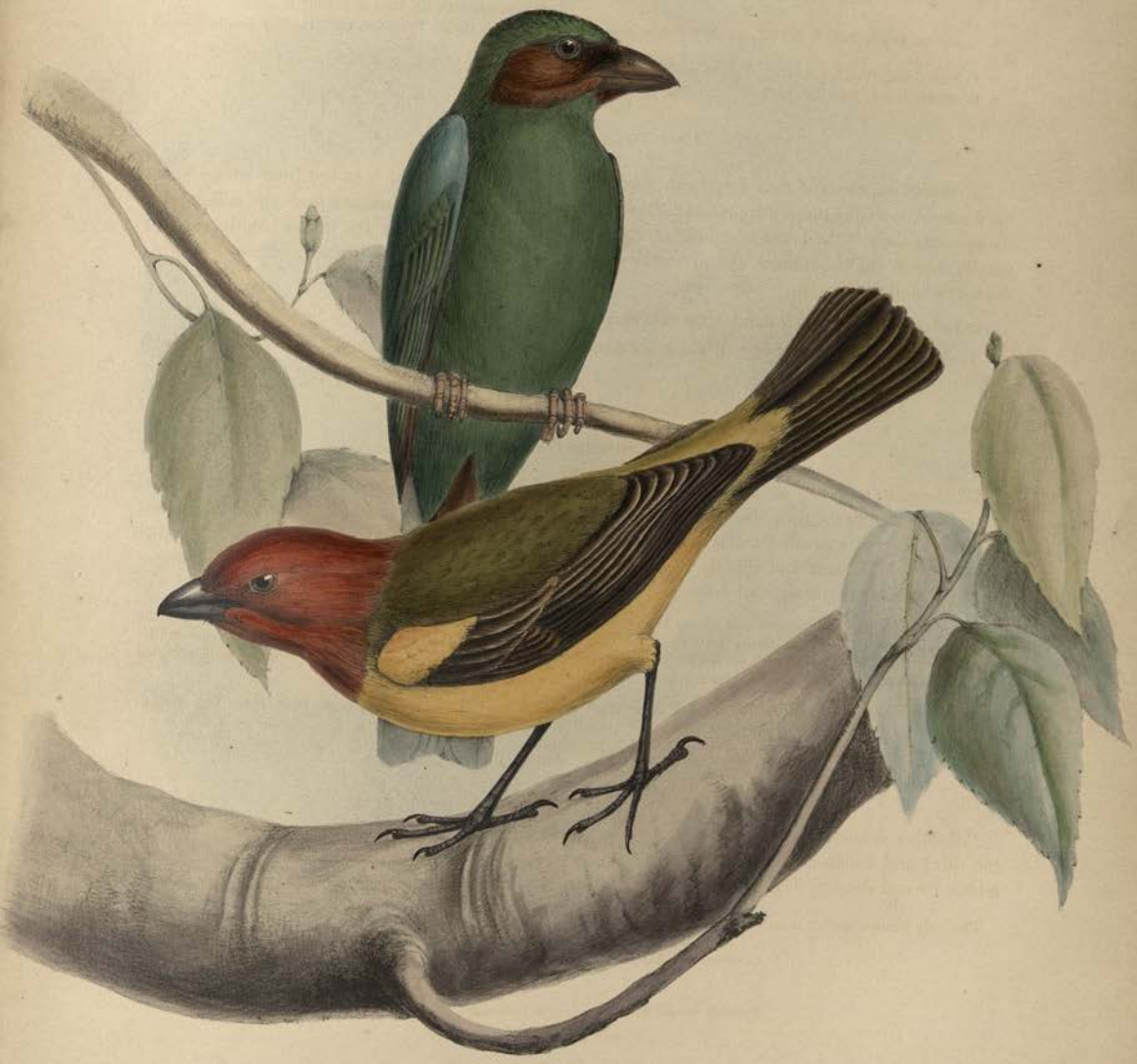
CERTHIDEA *Gould.*

Bill rather slender, straight, and acute; the lateral margins straight. *Wings* short and rounded, with the third and fourth quills the longest. *Tail* very short and slightly rounded. *Tarsi* as long as the middle toe and slender. The *Toes* short and slender, with the hind toe as long as the middle toe and robust.

The only known species is an inhabitant of the Galapagos Islands.

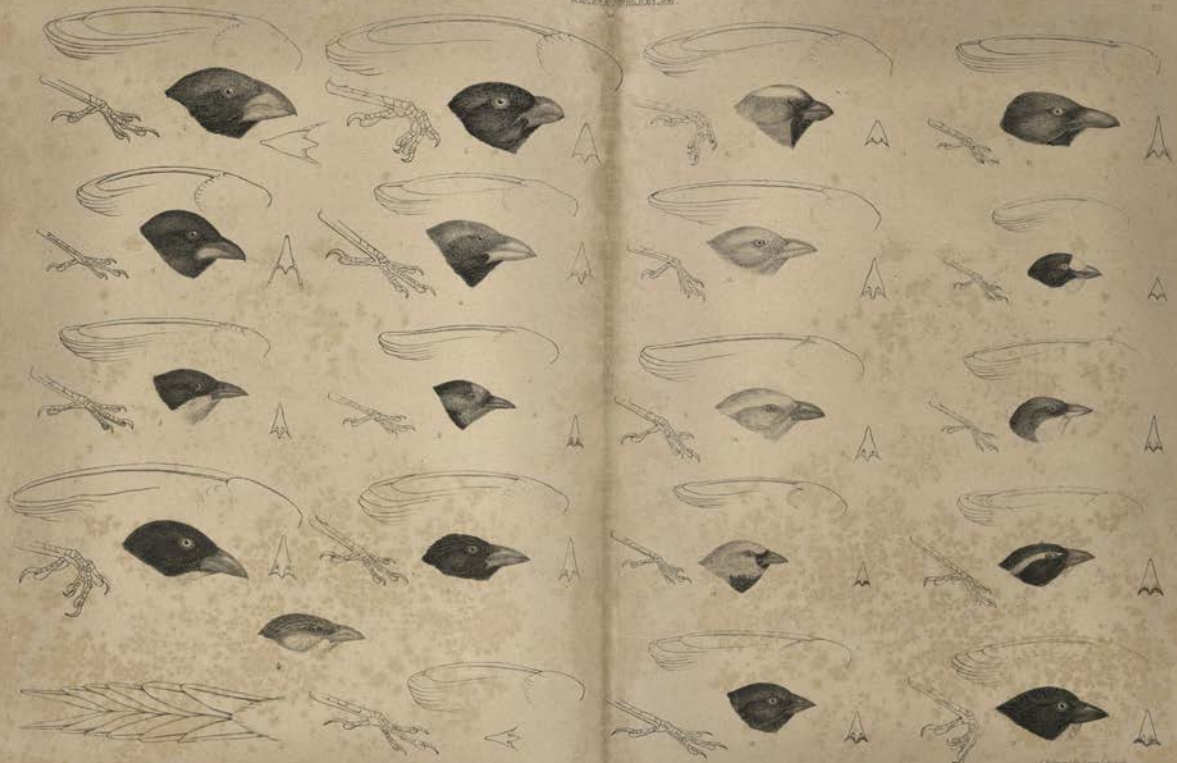
1. C. *olivacea* Gould, Proc. Z. S. 1837. 7., Voy. Beagle Zool. pl. 44.

* Probably coequal with *Piezorhina* of Lafresnaye, Mag. Zool. 1843.



SALTATOR
Riefferii (Bonap.)

PYRANGA
rubriceps G.R. Gray.



1. TITYLUS guatimo. 2. CISSOPIS Leveriana. 3. RAMPHOPIS jacapa. 4. SALTATOR atricollis.
5. CYANOCOMPSA cyanoides. 6. TANAGRELLA viridis. 7. LAMPROTES ruficollis. 8. TACHYPHONUS leucopterus.
9. EMBERIZOIDES ruficauda. 10. STEPHANOPHORUS coeruleus. 11. LANIO atricapillus. 12. PYRANGA rubra. 13. EUPHONIA flavifrons.
14. TANAGRA episcopus. 15. NEMOSIA fasciata. 16. CALLISTE tricolor. 17. ARREMON citrinellus.
18. PYRLO erythrocephalus. 19. EMBERIZOIDES chloricterus.

The third Subfamily,

TANAGRINÆ, or TANAGERS,

have the Bill more or less triangular at the base, with the culmen more or less arched to the tip, which is more or less emarginated; the Wings moderate and somewhat pointed; the Tarsi and Toes short and slender, and the hind toe rather lengthened and strong, with the Claws strong and curved.

EMBERIZOIDES *Temm.**

Bill rather long, conic, the culmen more or less arched, with the tip slightly emarginated, and the sides compressed towards the tip, the lateral margins more or less arched and sinuated; the nostrils basal, sunk in a triangular space, and naked. *Wings* short and rounded, with the second to the fifth quills nearly equal and longest. *Tail* lengthened, and more or less graduated and pointed. *Tarsi* robust, strongly scutellated, and as long as the middle toe. *Toes* long, with the outer shorter than the inner; the claws slender, long, and curved.

They are peculiar to the marshy plains of the warmer parts of South America; generally live in pairs in the thick foliage of the large bushes; but seek their food on the ground, where they can walk very quickly, though their flight is very slow.

1. E. *macroura* (Gmel.)—Emberizoides marginalis *Temm.* Pl. col. 114. f. 2.; Sphenura fringillaris *Licht.*; Sylvia herbicola *Vieill.*; Passerina sphenura *Vieill.*, Azara No. 230.

2. E. *melanotis* Temm. Pl. col. 114. f. 1.—Type of Leptonyx *Swains.* (1837).

PIPILO *Vieill.*†

Bill short, conic, thick at the base, with the culmen slightly arched, and the tip but slightly emarginated, the lateral margins nearly straight, angulated at the base, and covering those of the lower mandible, which are inflected; the nostrils lateral, basal, rounded, and exposed. *Wings* short, with the third and fourth quills equal, and longest. *Tail* lengthened, and slightly emarginated in the middle. *Tarsi* rather short, as long as the middle toe, and strong. *Toes* long and slender, with the inner shorter than the outer; the claws slender, long, and rather curved.

These species are found in various parts of the New World, and are fond of close sheltered thickets near streams of water, and where there is plenty of dry leaves, among which they search for worms, and the larvæ and eggs of insects; they also feed on various hard seeds and grains. The nest, Wilson says, is fixed on the ground among the dry leaves, near, and sometimes under, a thicket of briars, and is large and substantial. The outside is formed of leaves and dry pieces of grape-vine bark, and the inside of fine stalks of dried grass, the cavity completely sunk beneath the surface of the ground, and sometimes half-covered above with dry grass or hay. The eggs are usually five, of a pale flesh colour, thickly marked with specks of rufous, most numerous near the thick end.

1. P. *erythrophthalma* (Linn.) Vieill. Wils. Amer. Orn. pl. 10. f. 5. & 53. f. 5.— Pipilo ater *Vieill.*
2. P. *maculata* Swains. Phil. Mag. 1827. 434., Jard. & Selby's Ill. Orn. pl. 31 & 32.
3. P. *arctica* Swains. Faun. Bor. Am. ii. pl. 51. & 52.
4. P. *thoracica* (Ill.)—P. rufitorques *Swains.* Two Cent. and a Quarter, 312. fig. 60.; Carduelis rufogularis *Less.* Rev. Zool. 1839. 42.
5. P. *personata* Swains. Two Cent. and a Quarter, 311. fig. 58. Voy., Beagle, Zool. Birds, pl. 35.
6. P. *superciliosa* Swains. Two Cent. and a Quarter, 211. fig. 59.
7. P. *macronyx* Swains. Phil. Mag. 1827. 434.
8. P. *fusca* Swains. Phil. Mag. 1827. 434.
9. P. *rufescens* Swains. Phil. Mag. 1827. 434.

* This genus was established by M. Temminck (*Pl. col.*), who has since changed it to *Chlorion* in 1840. Mr. Swainson, in 1827, proposed *Tardivola*, and, in 1837, the same author established *Leptonyx*, both of which are coequal; the latter name was changed by me to *Coryphaspiza*, in 1840.

† It was in his *Analyse*, p. 32. (1816), that Vieillot proposed this genus.

Arremon *Vieill.**

Bill short, conic, the culmen elevated at the base and nearly straight to the tip, which is slightly bent and emarginated, the sides compressed, and the lateral margins nearly straight or slightly sinuated and inflected; the nostrils basal, small, and partly concealed by the frontal plumes. *Wings* short, with the four first quills graduated, and the fourth and fifth the longest. *Tail* moderate, and rounded at the end. *Tarsi* longer than the middle toe, and slender. The *Toes* moderate and slender, and the lateral ones equal; the claws moderate, slender, and slightly curved.

These birds are peculiar to the warmer parts of South America. They are generally seen in pairs, or in small groups, on the lower parts of the bushes, where they are very active, hopping from branch to branch in search of their food, which consists of seeds, &c.

1. Ar. *silens* (Lath.) Pl. enl. 742.— Ar. affinis *D'Orb & Lafr.* Voy. Amer. Ois. pl. 28. f. 1.; Ar. torquatus *D'Orb. & Lafr.*
2. Ar. *torquatus* Vieill. Gal. des Ois. t. 78., Desm. Tang. pl. .
3. Ar. *rufivertex* Fl. Prev. Zool. Venus, Rev. Zool. 1842. 335.
4. Ar. *atropileus* Lafr. Rev. Zool. 1842. 335.
5. Ar. *giganteus* Pr. Bonap. Proc. Z. S. 1837. 117.
6. Ar. *rubrirostris* Lafr. Rev. Zool. 1840. 227.
7. Ar. *superciliaris* Lafr. Rev. Zool. 1840. 227.
8. Ar. *flavopectus* Lafr. Rev. Zool. 1840. 227.
9. Ar. *flavirostris* Swains. Two Cent. and a Quarter, 347.
10. Ar. *semitorquatus* Swains. Two Cent. and a Quarter, 357.
11. Ar. ? *assimilis* Boiss. Rev. Zool. 1840. 67.
12. Ar. *albo-frenatus* Boiss. Rev. Zool. 1840. 68.
13. Ar. *pallidinucha* Boiss. Rev. Zool. 1840. 68.
14. Ar. *schistaceus* Boiss. Rev. Zool. 1840. 69.
15. Ar. *semirufus* Boiss. Rev. Zool. 1840. 69.
16. Ar. *gutturalis* Lafr. Rev. Zool. 1843. 98.
17. Ar. *rufinucha* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 27. f. 2. — Embernagra rufinucha *D'Orb. & Lafr.*

Embernagra *Less.*†

Bill moderate, conic, the culmen elevated at the base, and nearly straight to the tip, which is slightly emarginated, the sides compressed and the lateral margins sinuated; the nostrils basal, exposed, and rounded. *Wings* short, with the fourth to the sixth quills the longest. *Tail* lengthened and rounded. *Tarsi* strong, and longer than the middle toe. *Toes* long, strong, the lateral ones nearly equal, with the hind toe nearly as long as the middle one, and robust; the front claws short and curved, and the hind one long and much curved.

The species of this genus are peculiar to the warmer parts of South America. Some are always met with in the marshes, where they are seen perched on reeds and other kinds of aquatic plants; others seek the cultivated places, and such as are covered with small bushes, in small flocks of five or six individuals. They, however, frequently descend to the ground to search for their food, which consists of seeds. The nest is built in the midst of great tufts of marsh grass, or in small bushes, of dried grasses which are cleverly twisted together, in which are deposited five or six eggs.

1. E. *viridis* (Vieill.) Less. — Tanagra fabialata *Mus. de Paris*, Less. Tr. d'Orn.
2. E. *platensis* (Gmel.) D'Orb. & Lafr. — Emberiza bonariensis *Comm.*; Embernagra dumetorum *Less.* Azara No. 90.
3. E. *albinucha* D'Orb. & Lafr. Rev. Zool. 1838. 165. — E. mexicana *Less.* Rev. Zool. 1839. 42.
4. E. *brunneinucha* Lafr. Rev. Zool. 1839. 97.
5. E. *pyrgitoides* Lafr. Rev. Zool. 1839. 97.
6. E. *olivascens* D'Orb. & Lafr. Voy. Amér. Mér. Ois. p. 285.
7. E. *superciliosa* (Swains.) Two Cent. and a Quarter, 314.
8. E. *rufescens* (Swains.) Two Cent. and a Quarter, 315.— Type of Aimophila *Swains.* (1837).
9. ? E. *pileata* (Wagl.) Isis, 1831. 526. — Type of Altapetes *Wagler* (1831).
10. E. *poliocephala* (Gould), Voy. Beagle, Birds, p. 98.
11. E. *longicauda* Strickl. Ann. Nat. Hist. 1844. 420.

Pityl.us *Cuv.*‡

Bill short, very broad, somewhat swollen on the sides, the culmen much arched, with the tip emarginated, and the lateral margins much sinuated, and angulated at the base, the gonys lengthened and advancing upwards; the nostrils basal, small, and concealed by the frontal plumes. *Wings* moderate,

* Founded by Vieillot in his *Analyse*, p. 32., in 1816.

† It was in the *Traité d'Ornithologie*, p. 465. 1831, that M. Lesson gave name to this genus. Mr. Swainson's *Aimophila*, 1837, is coequal; and it probably embraces *Altapetes* (1831) of Wagler.

‡ First established by Cuvier, 1817, in his *Règne Animal*, 1st edit. p. 390.

with the third and fourth quills the longest. *Tail* lengthened, broad and nearly equal at the end. *Tarsi* as long as the middle toe and robust. The *Toes* moderate, with the outer longer than the inner one.

These strong-billed birds are peculiar to South America.

1. P. *grossus* (Linn.) Cuv. Pl. enl. 154.
2. P. *canadensis* (Linn.) Cuv. Pl. enl. 152. f. 2.
3. P. *erythromelas* (Gmel.) Cuv. Lath. Syn. pl. 43., Gal. des Ois. t. 59.
4. P. *portoricensis* (Daud.) Tr. d'Orn. ii. 29. — Pyrrhula auranticollis *Vieill.* Gal. des Ois. t. 55.
5. P. *cyaneus* (Gmel.) Edwards's Birds, pl. 125., Vieill. Ois. Chant. t. 64.
6. P. *Brissonii* (Licht.) — Loxia cærulea var. *β. Gmel.*
7. P. *melanocephalus* (Swains.) Audub. B. of Amer. pl. 373. — Fringilla xanthomaschalis *Wagl.* Isis, 1831.; Pitylus guttatus *Less.*; Fringilla maculata *Audub.*
8. P.? *magnirostris* (Pr. Bonap.) Proc. Z. S. 1837. 120.
9. P. *atropurpuratus* Lafr. Rev. Zool. 1838. 224.
10. P. *atro-olivaceus* Lafr. Rev. Zool. 1838. 224.
11. P. *personatus* Less. Rev. Zool. 1839. 24.
12. P. *ardesiacus* Less. Rev. Zool. 1840. 226.
13. P. *gnatho* (Licht.) Cat. Dupl. Berl. Mus. No. 215. — P. atrochalybeus *Jard. & Selby*, Ill. Orn. pl. 3.; P. erythrorhynchus *Swains.*
14. P. *torridus* (Gmel.) D'Orb. & Lafr. — Coccothraustes ruficventris *Vieill.*
15. P. *lazulus* Less. Rev. Zool. 1842. 174.
16. P. *chrysopeplus* (Vigors), Proc. Z. S. 1832. p. 4.
17. P. *chrysogaster* Less. Cent. Zool. t. 67. — Pitylus dorsigerus *Jard. & Selby*, Ill. Orn. n. s. t. 44.
18. P. *aureoventris* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 49.

Cissopis *Vieill.**

Bill short, thick, with the sides compressed and the culmen much arched towards the tip, which is emarginated, the lateral margins slightly arched, and the gonys rounded and arched upwards; the nostrils basal, lateral, rounded, and exposed. *Wings* short and rounded, with the third to the fifth quills longest. *Tail* lengthened and much graduated. *Tarsi* moderate, strongly scutellated, and slightly longer than the middle toe. *Toes* strong, the inner one shorter than the outer; the claws strong, moderate, and curved.

The type of this division is found only in the warmer parts of South America, where they live on the summits of the high trees, searching for buds and seeds on which they feed.

1. C. *Leverianus* (Shaw), Le Vaill. Ois. d'Afr. pl. 60. — Lanius picatus *Lath.*; Corvus Collurio *Daud.*; Cissopis bicolor *Vieill.* Gal. des Ois. pl. 140.

Lamprotes *Swains.*†

Bill lengthened, rather conic, with the culmen slightly arched to the tip, which is emarginated, the sides much compressed, and the lateral margins arched; the nostrils basal, lateral, entirely naked, and rounded. *Wings* rather lengthened and somewhat pointed, with the first quill hardly shorter than the second, which is the longer. *Tail* moderate, and even at the end. *Tarsi* shorter than the middle toe, and scutellated. *Toes* strong, with the lateral ones nearly equal; the claws short, curved, and compressed.

These birds are peculiar to the warmer parts of South America.

1. L. *ruficollis* (Spix), Swains. — T. rubrigularis *Spix*, Av. Bras. t. 56. f. 1.; Saltator niger *Vieill.*?
2. L. *albocristata* Lafr. Rev. Zool. 1843. 132.
3. L. *viridis* (Spix), Spix Av. Bras. t. 48. f. 2. — Type of Orthogonys *Strickl.* (1844).

Saltator *Vieill.* ‡

Bill lengthened, thick, the culmen elevated at the base, slightly arched to the tip, which is emarginated, the sides compressed, and the lateral margins rather sinuated, and covering those of the lower mandible; the nostrils basal, small, and partly hid by the frontal plumes. *Wings* moderate and rounded, with the

* Vieillot established this name in (*Analyse*, p. 40.) 1816; and Cuvier proposed, in the following year, *Bethylus* for the same type.
† Established by Mr. Swainson, 1837, in his *Classif. of Birds*, ii. p. 283. Mr. Strickland's genus *Orthogonys* (1844) is probably coequal.
‡ It was in 1816 that Vieillot established this division in his *Analyse*, p. 32.; and it is coequal with Mr. Swainson's *Spermagra* of 1827.

three first quills graduated, and the third nearly as long as the fourth, which is the longest. *Tail* lengthened and much rounded. *Tarsi* slender, and as long as the middle toe. *Toes* slender, with the outer one longer than the inner; the hind toe longer than the outer; the claws moderate and much curved.

The active birds of this genus are peculiar to South America. They frequent the bushes, especially those in orchards or gardens, where they are generally seen in pairs, or in small flocks, hopping from branch to branch, seeking buds, fruits, insects, and small snails, on which they feed. They rarely descend to the ground, where their walking is performed awkwardly, their flight is interrupted and slow. Their nest is built in the top of the thick bushes; it is spacious and formed of various kinds of roots, wherein they deposit two or three eggs.

1. S. *magnus* (Gmel.) Pl. enl. 205.—Saltator olivaceus *Vieill.*
2. S. *atriceps* Less. Cent. Zool. t. 69.
3. S. *atricollis* Vieill. Ency. Méth. 790., Azara No. 82.—Tanagra jugularis *Licht.*; Saltator validus *Vieill.* Azara No. 84.; Tanagra atricollis *Spix*, Av. Br. t. 56. f. 2.
4. S. *cærulescens* Vieill. Ency. Méth. 791., Azara No. 81.—Fringilla coracina *Kuhl*; Tanagra decumana *Licht.*; Tanagra superciliaris *Pr. Max.* Spix Av. Bras. t. 67.
5. S. *Azaræ* D'Orb. & Lafr. Voy. Amér. Mér. p. 287.
6. S. *aurantirostris* Vieill. Ency. Méth. 789., Azara No. 83.
7. S. *rubicus* Vieill. Ency. Méth. 792., Azara No. 85.—Tanagra flammiceps *Temm.* Pl. col. 177.; Tanagra porphyrio *Licht.*
8. S. *melanoleucus* Vieill. Ency. Méth. 791.
9. S. *maculatus* Vieill. Ency. Méth. 793., Azara No. 86.
10. S. *albicollis* Vieill. Ency. Méth. 793.
11. S. *ruficapillus* Vieill. Ency. Méth. 793.
12. S. *viridis* Vieill. Ency. Méth. 793., Azara No. 89.
13. S. *psittacinus* (Spix), Av. Bras. t. 57. f. 2.
14. S. *cyanopterus* Vieill. Ency. Méth. 790.
15. S. *cayanensis* (Gmel.) Pl. enl. 616.—Tanagra cayana *Lath.*; Saltator virescens *Vieill.*; Coracias cayanus *Bodd.*
16. S. *rufiventris* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 28. f. 1.
17. S. *similis* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 28. f. 2.
18. S. *Vigorsii.*—Saltator rufiventris *Vigors*, Zool., Beechey's Voy. Zool. p. 19.
19. S. *Riefferii* (Boiss.) Rev. Zool. 1840. 4.

Ramphopis *Vieill.**

Bill rather short, the culmen slightly arched to the tip, which is emarginated, the sides compressed and the lateral margins nearly straight, the base of the lower mandible thick and much dilated; the nostrils basal, rounded, and partly concealed by the frontal plumes. *Wings* moderate, with the three first quills graduated, and the third to the fifth nearly equal, and longest. *Tail* moderate and rounded. *Tarsi* the length of the middle toe. *Toes* moderate, the lateral ones unequal, with the hind toe long and strong; and the claws slender and curved.

The warmer parts of South America are the peculiar habitation of the species of this genus. They are always seen amongst the thickest foliage of the bushes of the plains and mountains, where they are continually moving about from branch to branch in search of buds and fruits.

1. R. *jacapa* (Linn.) Pl. enl. 128., Desm. Tang. t. 30, 31.—Tanagra albirostris *Bodd.*; Ramphocelus purpureus *Vieill.*; R. atrococcineus *Swains.* Ornith. Dr. pl. 20.
2. R. *brasilia* (Linn.) Desm. Tang. t. 28, 29.—Ramphocelus coccineus *Vieill.* Gal. des Ois. t. 79., Swains. Ornith. Dr. pl. 18, 19.
3. R. *dimidiatus* (Lafr.) Mag. Zool. 1837. f. 81.—R. melanogaster *Swains.*
4. R. *affinis* (Less.) Rev. Zool. 1840. 1. & 133.
5. R. *nigrogularis* Spix Av. Bras. t. 47., Swains. Ornith. Dr. pl. 17.—R. ignescens *Less.* Cent. Zool. t. 24.
6. R. *flammigerus* Jard. & Selby, Ill. Orn. pl. 131.—R. Passerini *Pr. Bonap.*
7. R. *atrosericeus* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 26. f. 1.
8. R. *icteronotus* Pr. Bonap. Proc. Z. S. 1837. 121.
9. R. *Luciani* (Latr.) Rev. Zool. 1838. 54., Mag. de Zool. 1839. Ois. t. 2.

Pyranga *Vieill.*†

Bill lengthened, broad at the base, gradually compressed to the tip, which is emarginated, the culmen rather arched, and the lateral margins of the upper mandible more or less angulated, or with a tooth-like lobe near the middle; the nostrils basal, lateral, small, and partly concealed by the frontal plumes. *Wings* lengthened and pointed, with the second quill nearly the length of the third, which is the longest. *Tail* moderate, even or slightly emarginated at the end. *Tarsi* and *Toes* short and slender, the former equal to the middle one, and the inner hardly shorter than the outer; the claws moderate, curved, and compressed.

* The *Analyse*, p. 32. 1816, of Vieillot contains this genus; the author has since changed it to *Ramphocelus.*

† This is given in (1805) in Vieillot's *Oiseaux de l'Amér. Sept.* Mr. Swainson's *Phœnisoma*, 1837, is coequal.

These are peculiar to the New World, and most of them inhabit the tropical parts. It is in the woods and groves that these showy birds are found, forming a striking ornament to the surrounding scenery. Fruits, as well as wasps and bees, &c., form their principal food. They have been observed, a little before sunset, in parts of the forests clear of underwood, darting after winged insects, and continuing thus engaged till it was almost dark. The nest is built on the horizontal branch of a tree, of stalks of broken flax and dry grass, so thinly woven together, that the light is easily perceivable through it. The eggs are three in number, of a dull blue, spotted with brown and purple.

1. P. *rubra* (Linn.) Swains. Pl. enl. 127. f. 1. & 156. f. 1. — Pyranga erythromelas *Vieill.*, Wils. American Ornithol. pl. 11. f. 3. & 4.
2. P. *æstiva* (Gmel.) Vieill., Wils. Amer. Orn. pl. 6. f. 3, 4.; Tanagra mississippiensis *Gmel.*, var. *Lath.* Syn. pl. 46.; Loxia virginica *Gmel.*; Tanagra olivacea *Gmel.*; Tanagra rudis *Sparr.* Mus. Carls. t. 94.; Pyranga hepatica *Swains.*; Tanagra saira *Spix?* Av. Bras. t. 48. f. 1.
3. P. *coccinea* (Bodd.) Pl. enl. 741. — Tanagra mississippiensis *Gmel.*; P. livida *Swains.* Phil. Mag. 1827. 438.
4. P. *Azaræ* D'Orb. & Lafr. — Saltator ruber et S. flavus *Vieill.* Azara No. 87, 88.; Tanagra mississippiensis *Licht.*; Pyranga mississippiensis *D'Orb. & Lafr.* Syn.
5. P. *bidentata* Swains. Phil. Mag. 1827. 438.
6. P. *ludoviciana* (Wils.) Jard. Wils. Amer. Orn. pl. 20. f. 1.— Pyranga erythropis *Vieill.*
7. P. *mexicana* Less. Rev. Zool. 1839. 41.
8. P. *sanguinolenta* Lafr. Rev. Zool. 1839. 97.
9. P. *olivacea* Less. Inst. 1834. — Phœnisoma olivacea *Less.* Rev. Zool. 1840. 99.
10. P. *cyanictera* Vieill. Ency. Méth. 798., Gal. des Ois. t. 81.
11. P. *cinerea* Vieill. Ency. Méth. 798.
12. P. *icteromelas* Vieill. Ency. Méth. 799.
13. P. *icteropus* Vieill. Ency. Méth. 799.
14. P. *chlorocephala* Vieill. Ency. Méth. 801.
15. P. *albicollis* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 26. f. 2.
16. P. *bivittata* (Lafr.) Rev. Zool. 1842. 70.
17. P. *rubriceps* G. R. Gray.

Lanio *Vieill.**

Bill lengthened, much compressed laterally especially at the tip, the culmen keeled and curved at the tip, which is much hooked and acute, and the lateral margins strongly dentated near the middle; the tip of the lower mandible emarginated, acute, and turned upwards; the nostrils basal, rounded, and nearly hidden by the frontal plumes. *Wings* moderate, with the third and fourth quills longest. *Tail* moderate and slightly rounded. *Tarsi* longer than the middle toe. *Toes* short and slender, with the outer toe hardly longer than the inner; the claws short and curved.

These birds are only seen in the hot humid forests of South America, where they are found in small troops on the summits of the high trees and especially palms, searching them for the seeds and buds, on which they feed.

1. L. *atricapillus* (Gmel.) Vieill. Pl. enl. 809. f. 2.
2. L. *cristatus* Vieill. Ency. Méth. 741.
3. L. *versicolor* (D'Orb. & Lafr.) Voy. de l'Amér. Mér. pl. 19. f. 1.

Tanagra *Linn.*†

Bill short, rather trigonal, and more or less elevated at the base, the culmen gradually arched and the sides compressed towards the tip, which is emarginated, and the lateral margins sinuated and inflected; the nostrils basal, small, rounded, and exposed. *Wings* moderate, with the three first quills more or less graduated, and the third and fourth the longest. *Tail* moderate, and mostly even at the end. *Tarsi* as long as the middle toe. *Toes* moderate, with the outer longer than the inner; the claws short and curved.

These South American birds live in troops, and are generally seen in orchards and gardens, where they are very destructive to the buds and fruits which form their food; the nest is carelessly constructed outwardly of sticks, but interiorly of hairs finely twisted together, wherein the parent deposits two or three eggs.

1. T. *episcopus* Linn. Pl. enl. 178. f. 1, 2., Desm. Tang. t. . — T. cana *Swains.* Ornith. Dr. pl. 37.; T. sayaca *Gmel.*
2. T. *ornata* Sparr. Mus. Carls. t. 95., Swains. Ornith. Dr. pl. 42. —T. archiepiscopus *Desm.* Tang. t. 17. 18., Spix Av. Br. t. 56. f. 2.
3. T. *olivascens* Licht. Cat. Dupl. Berl. Mus. No. 351., Swains. Ornith. Dr. pl. 38. — T. sayaca *Linn.*
4. T. *vicarius* Less. Cent. Zool. t. 68.
5. T. *glauca* Sparr. Mus. Carls. t. 54.—T. cœlestis *Spix*, Av. Bras. t. 55. f. 1.; T. serioptera *Swains.*
6. T. *argentata.* — T. episcopus *Swains.* Ornith. Dr. pl. 39.
7. T. *Swainsoni.* — T. cœlestis *Swains.* Ornith. Dr. pl. 41.
8. T. *inornata* Swains. Ornith. Dr. pl. 40.
9. T. *gularis* Linn. Pl. enl. 155. f. 2., Desm. Tang. t. .
10. T. *capitata* (D'Orb. & Lafr.) Voy. de l'Amér. Mér. Ois. t. 19. f. 2., Azara No. 137.
11. T. *cyanocephala* D'Orb & Lafr. Voy. de l'Amér. Mér. Ois. t. 25. f. 1. — T. Maximiliani *D'Orb. & Lafr.*
12. T. *striata* Gmel. Voy. of Beagle, Birds, pl. 36. — T. Darwinii *Pr. Bonap.*; T. chrysogaster *Cuv.* Azara No. 94.
13. T. *zena* (Linn.) Vigors, Catesby's Carol. t. 42. — Fringilla

* Given by Vieillot (1816) in his *Analyse*, p. 40.

† This Linnean genus was established in 1766, and *Thraupis* of Boie (1826) is coequal; it embraces, according to my opinion, *Spindalis* of Sir W. Jardine and Mr. Selby (1837).

bahamensis *Briss.* Voy. l'Ile de Cuba, Ois. t. 11.; T. multicolor *Vieill.* Gal. des Ois. t. 76.; T. nigricephala *Jameson*; Spindalis bilineatus *Jard. & Selby*, Ill. Orn. n. s. pl. 9.

14. T. *Pretrei* Less. Cent. Zool. t. 45.
15. T. *atra* Gmel. Pl. enl. 714. f. 2. — T. melanopis *Lath.*
16. T. *fasciata* Licht. Cat. Dupl. Berl. Mus. No. 353.
17. T. *leucophæa* Licht. Cat. Dupl. Berl. Mus. No. 354.
18. T. *montana* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 23. f. 1.
19. T. *cyanicollis* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 25. f. 1.
20. T. *eximia* Boiss. Rev. Zool. 1840. 66. — T. cucullata *Jard. & Selby*, Ill. Orn. n. s. t. 43.
21. T. *arthus* Less. Cent. Zool. t. 9.

Stephanophorus *Strickl.**

Characters in common with Tanagra: but it has the *Bill* very short, broad at the base, with the culmen slightly keeled, and much arched to the tip, which is emarginated; the lower mandible broad, strong, and somewhat swollen, especially at the front.

The type is found only in the warmer parts of South America.

S. *cæruleus* (Vieill.) Strickl. Gal. des Ois. t. 54. — Tanagra diademata *Temm.* Pl. col. 243.; Fringilla splendida *Licht.*?

Tachyphonus *Vieill.*†

Bill conic, more or less lengthened, compressed on the sides, the culmen arched to the tip, which is emarginated, and the lateral margins more or less sinuated; the nostrils basal, small, and partly concealed by the frontal plumes. *Wings* moderate, with the first four quills graduated, and the fourth the longest. *Tail* moderate, rounded or slightly emarginated at the end. *Tarsi* longer than the middle toe. *Toes* long and strong, with the lateral ones equal; and the claws moderate and curved.

These are also peculiar to South America, where they prefer bushes in cultivated places near water, and are seen actively leaping about from branch to branch, seeking for grains and buds, on which they live. Their flight is rapid and interrupted.

1. T. *leucopterus* (Gmel.) Vieill. Pl. enl. 179. f. 2. — T. nigerrima *Gmel.*; Oriolus melaleucus *Sparr.* Mus. Carls. t. 31.; T. rufa *Bodd.* Pl. enl. 711.; Type of Pyrrota *Vieill.* (1816.).
2. T. *loricatus* (Licht.) Cat. Dupl. Berl. Mus. No. 340, 341.
3. T. *tenuirostris* Swains. Brand's Journ. No. 39. — T. luctuosus *D'Orb. & Lafr.* Voy. de l'Amér. Mér. Ois. t. 20.
4. T. *phœniceus* Swains. Two Cent. and a Quarter, 311. — Tachy. saucius *Strickl.*
5. T. *cristatus* (Linn.) Vieill. Pl. enl. 301. f. 2. — T. cirrhomelas *Vieill.*; Houpette noire *Desm.* Tang. t.; T. brunnea *Spix*, Av. Bras. t. 49. f. 2.
6. T. *quadricolor* Vieill. Ency. Méth. 803. — Tanagra auricapilla *Spix*, Av. Br. t. 52.; Tachyphonus Suchii *Swains.*; Muscicapa galeata *Licht.*
7. T. *ruber* Vieill. Ency. Méth. 804.
8. T. *chloricterus* Vieill. Ency. Méth. 804.
9. T. *coryphæus* (Licht.) Cat. Dupl. Berl. Mus. No. 342, 343.; Azara No. 77. — T. Vigorsii *Swains.* Jard. & Selby's Ill. Orn. pl. 36. f. 1.
10. T. *tæniatus* Boiss. Rev. Zool. 1839. 41.
11. T. *penicillatus* (Spix), Av. Bras. t. 49. f. 1.
12. T. *sanguinolentus* (Less.) Cent. Zool. t. 39.
13. T. *flavinuchus* D'Orb. & Lafr. Voy. de l'Amér. Mér. Ois. t. 21. f. 1.
14. T. *Victorinii* Lafr. Rev. Zool. 1842. 336.
15. T. *olivi-cyaneus* (Lafr.) Rev. Zool. 1843. 69.
16. T. *olivaceus* Swains. Brand's Journ. No. 39.
17. T. *igniventris* (D'Orb. & Lafr.) Voy. de l'Amér. Mér. Ois. t. 25. f. 2.
18. T. *lunulatus* (Dubus.) Bull. de l'Acad. Brux. 1839. 441. t. — Tanagra Constantii *Boiss.*; Aglaia erythrotis *Jard. & Selby*, Ill. Orn. n. s. t. 36.
19. T. *rubescens* Swains. Pl. enl. 181. f. 1. — Fringilla cristata *Gmel.*; Fringilla araguira *Vieill.* Ois. Chant. t. 28.
20. T. *cristatellus* (Spix), Av. Bras. t. 53. f. 1. — Tachyphonus fringilloïdes *Swains.*; Emberiza ruticapilla *Sparr.*? Mus. Carls. t. 44.
21. T.? *capistratus* (Spix), Av. Bras. t. 54. f. 1.
22. T.? *axillaris* (Spix), Av. Bras. t. 54. f. 2.
23. T.? *involucratus* (Less.) Rev. Zool. 1839. 41.
24. T. *ruficeps* Strickl. Ann. Nat. Hist. 1844. 419.

Nemosia *Vieill.*‡

Bill rather robust, the culmen slightly arched to the tip, which is emarginated, the sides compressed, and the lateral margins sinuated; the nostrils basal, small, and partly concealed by frontal plumes. *Wings* lengthened, with the second, third, and fourth quills the longest. *Tail* moderate, and even

* Established in 1841 (*Proc. Z. S.* p. 30.) by Mr. Strickland.

† Founded by Vieillot in (1816) his *Analyse*, p. 33.; it embraces *Pyrrota* of the same author. *Comarophagus* of M. Boie (1826) is proposed on the same type.

‡ This name was established by Vieillot in (1816) his *Analyse*, p. 32.

at its ends. *Tarsi* moderate, as long as the middle toe. *Toes* moderate and slender, the lateral ones unequal, the hind toe long and strong; the claws short and curved.

These are peculiar to the warmer parts of South America. They inhabit the moist forests, keeping to the summits of the large trees; they are very active, and are always flying about rapidly in search of their favourite food, which consists of fruits, and buds, &c.

1. N. *pileata* (Gmel.) Vieill. Pl. enl. 720. f. 2.
2. N. *verticalis* Lafr. Rev. Zool. 1840. 227.
3. N. *flavicollis* Vieill. Ency. Méth. 788., Gal. des Ois. t. 75. — Tanagra speculifera *Temm.* Pl. col. 36. f. 1, 2.
4. N. *ruficapillus* Vieill. Ency. Méth. 788.
5. N. *sordida* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 18. f. 2.
6. N. *nigricollis* (Gmel.) Vieill. Pl. enl. 720. f. 1.
7. N. *fulvescens* Strickl. Ann. Nat. Hist. 1844. 420.

TANAGRELLA *Swains.**

Bill conic, very slender, compressed and lengthened, with the culmen gradually arched to the tip, which is emarginated, the lateral margins nearly straight, and the gonys lengthened and gradually advancing upwards; the nostrils basal, lateral, rounded, and partly concealed by the frontal plumes. *Wings* moderate and pointed, with the first quill rather shorter than the second and third, which are the longest. *Tail* moderate and even. *Tarsi* as long as the middle toe *Toes* short and slender, the lateral ones equal, the hind toe long and strong; the claws short and curved.

1. T. *velia* (Gmel.) Strickl. — T. multicolor *Swains.* Pl. enl. 669. f. 3.; Tanagrella tenuirostris *Swains.*; T. cyanomelas *Pr. Max.*
2. T. *iridina* Hartl. Rev. Zool. 1841. 305.

CALLISTE *Boie.*†

Bill short, slender, much compressed on the sides, the culmen slightly arched to the tip, which is emarginated; the nostrils basal, lateral, and more or less concealed by the frontal plumes. *Wings* rather lengthened, with the first quill nearly as long as the second, and the second and third the longest. *Tail* short, and nearly even at the end. *Tarsi* longer than the middle toe. *Toes* short and slender, with the inner toe shorter than the outer; the claws short and curved.

These richly coloured birds are peculiar to the warm and humid forests of South America, where they are generally seen on the tops of the high trees and palms.

1. C. *tricolor* (Gmel.) Boie, Pl. enl. 33. f. 1., Pl. col. 215. f. 1.
2. C. *festiva* (Shaw) Pl. col. 215. f. 2., Pl. enl. 33. f. 2., Swains. Ornith. Dr. pl. 5., Nat. Misc. pl. 537. — Tanagra tricolor var. *Lath.* Don. Nat. Res. pl. 23.; Tanagra trichroa *Licht.* Kittl. Vogels t. 31. f. 2.; Tanagra cyanocephala *Vieill.*
3. C. *citrinella* (Temm.) Pl. col. 42. f. 2., Swains. Ornith. Dr. pl. 6. — Tanagra elegans *Pr. Max.*
4. C. *thoracica* (Temm.) Pl. col. 42. f. 1.
5. C. *gyrola* (Linn.) Pl. enl. 133. f. 2. — Aglaia chrysoptera *Swains.*
6. C. *Desmarestii.* — Aglaia gyrola *Swains.* Zool. Ill. 11. pl. 28.
7. C. *cayana* (Linn.) Pl. enl. 201. f. 2. 290. f. 1., Desm. Tang. t.
8. C. *peruviana* (Desm.) Desm. Tang. t. — Aglaia melanotus *Swains.* Ornith. Dr. pl. 31. 43.
9. C. *cucullata* (Swains.) Ornith. Dr. pl. 7.
10. C. *cyanoptera* (Swains.) Ornith. Dr. pl. 8. — Tanagra argentea *Lafr.* Rev. Zool. 1843. 69.
11. C. *brasiliensis* (Linn.) Pl. enl. 179. f. 1.
12. C. *punctata* (Linn.) Pl. enl. 133. f. 1.
13. C. *tatao* (Linn.) Pl. enl. 127. f. 2. pl. 7. f. 1.
14. C. *chilensis* (Vigors), Proc. Z. S. 1832. 3. — Aglaia zeni *D'Orb. & Lafr.* Syn. Voy. Amér. Mér. Ois. pl. 24. f. 2.
15. C. *flava* (Lath.) Swains. Zool. Ill. n. s. pl. — Tanagra chloroptera *Vieill.*?; Tanagra formosa *Vieill.*
16. C. *nigrovincta* (Pr. Bonap.) Proc. Z. S. 1837. 121.
17. C. *Schrankii* (Spix), Av. Bras. t. 51. f. 1, 2. — Aglaia melanotis *Swains.* D'Orb. & Lafr. Voy. Amér. Mér. t. 24. f. 1.
18. C. *cæruleocephala* (Swains.) Two Cent. and a Quarter, 356.
19. C. *cyanoventris.* — A. peruviana *Swains.* nec Desm. Two Cent. and a Quarter, 356.
20. C. *fastuosa* (Less.) Cent. Zool. t. 58.
21. C. *mexicana* (Linn.) Pl. enl. 290. f. 2. — Tanagra flaviventris *Vieill.*
22. C. *albiventris.* — T. mexicana var. *β. Lath.* Pl. enl. 155. f. 1. — Blue Tanager, *Lath.* Hist.
23. C. *nigroviridis* (Lafr.) Rev. Zool. 1843. 69.
24. C. *vittata* (Temm.) Pl. col. 48.
25. C. *labradorides* (Boiss.) Rev. Zool. 1840. 67.
26. C. *Vassorii* (Boiss.) Rev. Zool. 1840. 4., Mag. de Zool. 1841. t. 23.
27. C. *Parzudaki* (Lafr.) Rev. Zool. 1843. 97., Mag. de Zool. 1843. t. 41.
28. C. *Leclancherii* (Lafr.) Mag. Zool. 1841. Ois. t. 42.
29. C. *diaconus* (Less.) Rev. Zool. 1842. 175.
30. C. *thalassina* Strickl. Ann. Nat. Hist. 1844. 419.

* Mr. Swainson established this division in (*Class. of Birds*, ii. 286.) 1837.

† Proposed by Boie (*Isis*) in 1826, *Aglaia* of Mr. Swainson (1827) is coequal. Having formerly considered these names as employed elsewhere, I was induced to propose, in their place, *Calospiza* in 1840.

EUPHONIA *Desm.**

Bill short, broad and depressed at the base, and laterally compressed, the culmen much arched and somewhat keeled, with the tip emarginated and the lateral margins nearly straight, and sometimes dentated; the nostrils basal, rounded, and partly concealed by the frontal plumes. *Wings* moderate, with the first and second quills the longest. *Tail* short and nearly even. *Tarsi* slender, as long as the middle toe. *Toes* short, with the lateral ones unequal; the claws short and curved.

These birds live in small troops on the summits of the forest trees in the warmer parts of South America, especially on those in the neighbourhood of rivers. They are very active and restless in their movements.

1. E. *musica* (Gmel.) Pl. enl. 809. f. 1. — Pipra cyanocephala *Linn.*?
2. E. *olivacea* (Desm.) Desm. Tang. t. .
3. E. *violacea* (Linn.) Planch. enlumin. 114. f. 2. — Pipra grisea *Linn.*?
4. E. *hirundinacea* Pr. Bonap. Proc. Z. S. 1837. 117.
5. E. *chlorotica* (Linn.) Pl. enl. 114. f. 1., Sv. Akad. 1833. t. 10. f. 3. 2.
6. E. *cayanensis* (Linn.) Desm. Tang. t. .
7. E. *pectoralis* (Lath.) Wagl. — Euphone rufiventris *Licht.*; Euphone à ventre-marron, *Vieill.* Gal. des Ois. t.
8. E. *leucocephala* (Gmel.) — Tanagra albifrons *Lath.*
9. E. *aureata* (Vieill.) Ency. Méth. 782., Azara No. 99. — E. nigricollis *Vieill.*
10. E. *viridis* (Vieill.) Ency. Méth. 784., Pl. col. 36. f. 3.
11. E. *chlorocyanea* (Vieill.) Ency. Méth. 781.
12. E. *rufiventris* (Vieill.) Ency. Méth. 781. — Euphone à ventreroux, *Vieill.* Gal. des Ois. t. .
13. E. *cyanoventris* (Vieill.) Ency. Méth. 781.
14. E. *tephrocephala* (Vieill.) Ency. Méth. 781.
15. E. *Desmarestii* (Vieill.) Ency. Méth. 774.
16. E. *serrirostris* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 21. f. 2, 3.
17. E. *laniirostris* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 22. f. 1.
18. E. *ruficeps* D'Orb. & Lafr. Voy. Amér. Mér. Ois. pl. 22. f. 2.
19. E. *Pretrei* Lafr. Rev. Zool. 1843. 97.
20. E. *affinis* Less. Rev. Zool. 1842. 175.
21. E. *ænea* (Sundev.) Sv. Akad. 1833. t. 11. f. 4.
22. E. *xanthogaster* (Sundev.) Sv. Akad. 1833. 310. t. 10. f. 1.
23. E. *aurora* (Sundev.) Sv. Akad. 1823. t. 11. f. 5. — Pipra Laplacei *Eyd. et Gerv.* Mag. de Zool. 1836. Ois. t. 68.

CYPSNAGRA *Less.*†

Bill moderate, somewhat slender, conic, with the culmen arched to the tip, which is entire, the lateral margins arched, and the gonys lengthened and advancing upwards; the nostrils basal, lateral, rounded, and exposed. *Wings* moderate, with the second, third, and fourth quills the longest. *Tail* lengthened and even. *Tarsi* strong, as long as the middle toe. *Toes* short, with the lateral ones equal; claws short, strong, and slightly curved.

This type is peculiar to South America, where they are seen in small troops of six or seven individuals, flying about from bush to bush; they stay but a short time on each, seeking for grains and buds, which form a portion of their food.

C. *ruficollis* (Licht.) Cat. Berl. Mus. No. 330. — Cypsnagra hirundinacea *Less.*; Leucopygia ruficollis *Swains.*

* This genus was proposed by Desmarest (1805) in his *Hist. Nat. des Tangras, &c.*

† M. Lesson gave this name in his *Traité d'Ornithologie*, 1831, p. 460.; and, in 1837, Mr. Swainson proposed *Leucopygia* for the same type.

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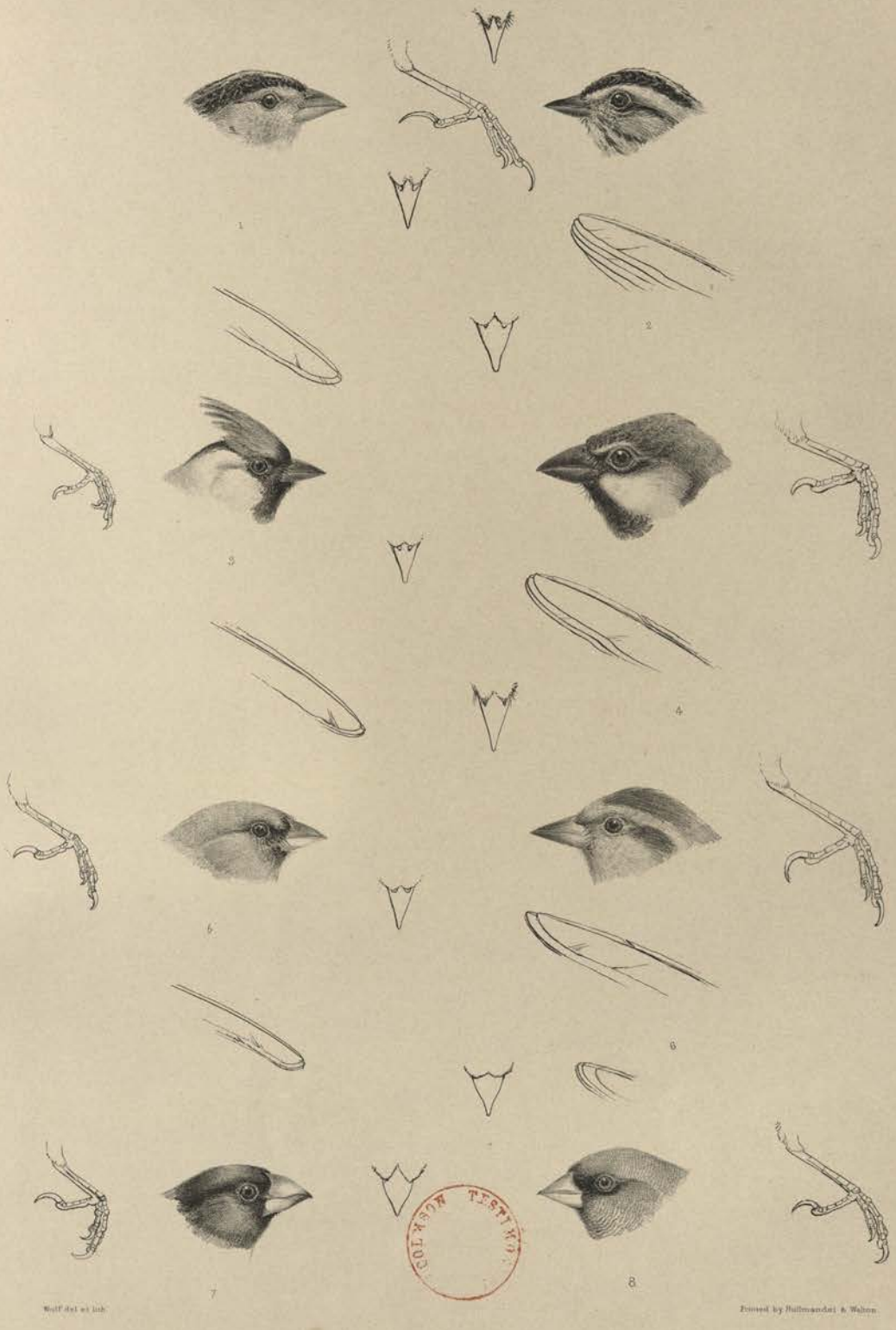
ESTRELDA
erythronota Vieill.

AMADINA
sanguinolenta (Temm.)



1 AMMODROMUS passerinus. 2 ZONOTRICHIA albicollis. 3 TIARIS ornatus. 4 PASSER salicarius. 5 SPIZA cyanea.
6 FRINGILLA nipalensis. 7 AMADINA poensis. 8 ESTRELDA astrild.

The fourth Subfamily,

FRINGILLINÆ, or FINCHES,

have the Bill short, conic, and more or less broad at the base, with the culmen sloping, and the sides compressed to the tip, which is generally entire; the gonys long, and advancing upwards; the Wings more or less lengthened and pointed; the Tail varying in length, sometimes with the ends of the feathers acuminated; the Tarsi as long as, or shorter than, the middle toe, slender, and transversely scaled; the Toes more or less long and slender; the hind toe moderate; the claws generally long, curved, and acute.

ESTRELDA *Swains.**

Bill more or less strong, conical, and broad at the base, with the culmen sloping, and the sides compressed to the tip, which is slightly emarginated; the gonys long, and advancing upwards; the nostrils basal, lateral, and very small, sometimes hidden by the frontal plumes. *Wings* rather short; with the first quill minute; the second nearly as long as the third and fourth, which are equal and longest. *Tail* more or less lengthened, and graduated or rounded. *Tarsi* rather shorter than the middle toe, slender, and covered in front with broad transverse scales. *Toes* long and slender, with the inner toe shorter than the outer; the hind toe long and slender; the claws long, curved, and very acute.

The species of this genus are found in Africa, Asia, and Australia. They frequent in small flocks the meadows and bushy grounds, but may be observed in gardens near houses. Their food consists of seeds and buds of small plants. If disturbed from among the grass, they prefer to perch on the neighbouring bushes, rather than fly off to any distance.

1. E. *astrild* (Linn.) Swains. Pl. enl. 157. f. 2., Kittl. Kupf. Vög. t. 10. f. 2.—Fringilla undulata *Pall.* Edw. Birds, pl. 354. f. 2. 179. f. 2.; F. tricolor *Vieill.* Ois. chant. t. 12.
2. E. ———? Pl. enl. 230. f. 2.—Loxia astrild var.
3. E. *amandava* (Linn.) Pl. enl. 115. f. 3. & 2. var., Vieill. Ois. chant. t. 1, 2., Edw. Birds, pl. 355. f. 1.—Fringilla punicea *Horsf.*
4. E. *benghala* (Linn.) Pl. enl. 115. f. 1., Kittl. Kupf. Vög. t. 10. f. 3., Vieill. Ois. chant. t. 5.— Fringilla angolensis *Linn.*; Estrelda phœnicotis *Swains.* B. of W. Afr. t. 14., Edw. Birds, pl. 131.
5. E. *senegala* (Linn.) Pl. enl. 157. f. 1., Vieill. Ois. chant. t. 9.
6. E. *granatina* (Linn.) Pl. enl. 109. f. 3., Vieill. Ois. chant. t. 17, 18., Edw. Birds, pl. 191.
7. E. *melanura* (Vieill.) Pl. enl. 230. f. 3., Brown's Illust. t. 29. upp. fig.
8. E. *leucura* (Gmel.) Brown's Illustr. t. 29. lower fig.
9. E. *bella* (Lath.) Griff. An. Kingd. ii. pl. p. ., Vieill. Ois. chant. t. 55., Gould, B. of Austr. iii. pl. 78.
10. E. *erythronota* (Vieill.) Ois. chant. t. 14.—Estrelda lipiniana *A. Smith.*
11. E. *melanogaster* Swains. B. of W. Afr. p. 194.
12. E. *rufopectus* Fras. Proc. Z. S. 1843. p. 27.
13. E. *melanotis* (Temm.) Pl. col. 221. f. 1.
14. E. *polyzona* (Temm.) Pl. col. 221. f. 3.
15. E. *rubricata* (Licht.) Cat. Dupl. Berl. Mus. p. 27.
16. E. *frontalis* (Vieill.) Ois. chant. t. 16.
17. E. *squamifrons* A. Smith, Rep. S. Afr. Exped. p. 49., Illustr. Zool. S. Afr. Birds, pl.
18. E. *oculea* Quoy & Gaim. Voy. de l'Astrol. Ois. t. 18. f. 2., Gould, B. of Austr. iii. pl. 79.

* Established by Mr. Swainson in 1827. M. Cabanis changed this name to *Habropyga* in 1847, while *Loxigilla* of M. Lesson (1830) is synonymous. It embraces *Pytelia* of Mr. Swainson (1837), and *Neochmia* of MM. Hombron et Jacquemont.

19. E. *rubriventris* (Vieill.) Ois. chant. t. 13.— Fringilla troglodytes *Licht.*
20. E. *bicolor* (Vieill.) Ois. chant. t. 19.
21. E. *cinerea* (Vieill.) Hartl. Vieill. Ois. chant. t. 6., Kittl. Kupf. Vög. t. 10. f. 1.
22. E. *melpoda* (Vieill.) Hartl. Vieill. Ois. chant. t. 7.
23. E. *cærulescens* (Vieill.) Swains. Vieill. Ois. chant. t. 8.
24. E. *viridis* (Vieill.) Ois. chant. t. 4.
25. E. *mystacea* (Vieill.). N. Dict. d'Hist. Nat. xii. p. 182.
26. E. *atricollis* (Vieill.) N. Dict. d'Hist. Nat. xii. p. 132.
27. E. *Dufresnei* (Vieill.) N. Dict. d'Hist. Nat. xii. p. 181.
28. E. *sulflava* (Vieill.) N. Dict. d'Hist. Nat. xxx. p. 575.
29. E. *versicolor* (Vieill.) Encyc. Méth. p. 992.
30. E. *Perreini* (Vieill.) N. Dict. d'Hist. Nat. xii. p. 181.
31. E. *nitida* (Lath.).
32. E. *speciosa* (Bodd.) Pl. enl. 203. f. 1.—Fringilla elegans *Gmel.* Vieill. Ois. chant. t. 25.; Type of Pytelia *Swains.* (1837.)
33. E. *melba* (Linn.) Edw. Birds, pl. 272. f. 2. 128.
34. E. *psittacea* (Gmel.) Lath. Syn. pl. 48., Vieill. Ois. chant. t. 32.—Loxia pulchella *Forst.* Descr. Mam. p. 273., Icon. ined. 155.
35. E. ? *afra* (Gmel.) Brown, Illustr. pl. 25.
36. E. *phœnicoptera* (Swains.) B. of W. Afr. pl. 16. — Estrelda erythroptera *Less.*
37. E. ? *formosa* (Lath.) Bl.
38. E. *trichura* (Kittl.) Mém. de l'Acad. Imp. Pétersb. 1835. t. 2. p. 8. t. 10.
39. E. *minima* (Vieill.) Rüpp. Ois. chant. t. 10.
40. E. ? *phæton* (Homb. & Jacq.) Voy. au Pole Sud, t. 22. f. 3.—Type of Neochmia *Homb. & Jacq.*
41. E. *musica* (Vieill.) Ois. chant. t. 11.

Amadina *Swains.**

Bill short, acutely conical, and very broad at the base, with the culmen very broad, flattened, pointed on the forehead, and sloping, and the sides compressed to the tip, which is acute; the lower mandible nearly equal in size to the upper; the sides broad, and the gonys ascending to the acute tip; the nostrils basal, sunken, lateral, and hidden by the frontal plumes. *Wings* short and rounded, with the first quill minute, and the second nearly as long, or sometimes quite as long, as the third and fourth, which are longest. *Tail* short, even, or rounded on the sides, with the middle feathers sometimes prolonged in a narrow point beyond the others. *Tarsi* shorter than the hind toe, rather strong, and covered in front with broad scales. *Toes* more or less long and slender; the lateral toes nearly equal; the outer toe slightly united at its base; the hind toe long, and armed with a long curved claw.

The species are inhabitants of Africa, Asia, and Australia. They may be observed singly, or in small flocks, among the tall grass and bushes, but are generally seen feeding on the ground in the vicinity of the rivers and cultivated places, especially rice swamps. Others are more usually found in the reeds that grow on the margins of rivers, exhibiting great activity in passing up and down their stems; but, when disturbed, they generally fly off to the hedges and shrubs in the immediate neighbourhood. Some of the species are migratory, appearing in the mountainous districts during the breeding season, and returning to the plains on the approach of winter. The food of these birds consists of various kinds of grains and insects. The nest is of large size, composed of grasses formed into a spherical ball, fixed among the slender branches or stiff leaves of palms and other trees, with a small, round, spout-like opening on the side or top, through which the bird enters. Both sexes labour at the forming of the nest, and generally share in the task of rearing the young. The eggs are four to ten in number.

1. A. *fasciata* (Gmel.) Brown's Ill. pl. 27., Vieill. Ois. chant. t. 58.—Loxia jugularis *Shaw*; Fringilla detruncata *Licht.*
2. A. *indica* (Gmel.) Edw. Birds, pl. 272. f. 1.
3. A. *erythrocephala* (Linn.) A. Smith, Ill. S. Afr. Zool. Aves, pl. 69.—Loxia brasiliana *Bodd.* Gmel. Pl. enl. 309. f. 1., Vieill. Ois. chant. t. 49.; L. maculosa *Burch*, Edw. Birds, pl. 180. f. 1.
4. A. *oryzivora* (Linn.) Pl. enl. 152. f. 1., Vieill. Ois. chant. t. 61., Swains. Zool. Ill. n. s. 156. — Loxia javensis *Sparm.* Mus. Carls. t. 58., Edw. Birds, pl. 41, 42.
5. A. *melanictera* (Gmel.) Pl. enl. 224. f. 1.
6. A. *melanoleuca* (Gmel.) Pl. enl. 224. f. 2.
7. A. *fuscata* (Vieill.) Vieill. Ois. chant. t. 62.

* Established by Mr. Swainson in 1827. M. Cabanis changed this name to *Sporothlastes* in 1847. It embraces *Spermestes* of Mr. Swainson (1837), with which *Munia* of Mr. Hodgson (1836), changed by the same writer to *Dermophrys* in 1841, is synonymous; *Lonchura* of Col. Sykes (1832), with which *Erythrura* of Mr. Swainson (1837) is synonymous; *Donacola* of Mr. Gould (1841), with which *Weebongia* (1844) of M. Lesson is coequal; and it includes *Poephila* of Mr. Gould (1842).

8. A. *guttata* (Shaw), Lev. Mus. pl. .—Fringilla leucocephala *Lath.* Vieill. Ois. chant. t. 26.; F. Lathami *Vig. & Horsf.* B. of Austr. pl. 86.

9. A. *cana* (Linn.) Edw. Birds, pl. 179. f. 1.

10. A. *nitens* (Linn.) Swains. Pl. enl. 291. f. 1, 2., Vieill. Ois. chant. t. 21.—Fringilla ultramarina *Linn.* Vieill. Ois. chant. t. 21., Edw. Birds, pl. 362. f. 1.

11. A. *Lathami* (A. Smith), Rep. S. Afr. Exp. p. 51.

12. A. *poensis* Fras. Proc. Z. S. 1842. 145., Zool. Typ. pl. .

13. A. *bicolor* Fras. Proc. Z. S. 1842. 145., Zool. Typ. pl. .

14. A. *larvata* (Rüpp.), Rüpp. Faun. t. 36. f. 1.

15. A. *nitida* (Lath.) Lath. Syn. pl. 131., Vieill. Ois. ch. t. 60.

16. A. ? *calida* (Lath.).

17. A. *javensis* (Sparr.) Mus. Carls. t. 88.

18. A. *fringilloides* (Lafr.) Mag. Zool. 1835. t. 48.

19. A. *modesta* (Gould), Proc. Z. S. 1836. p. 105., B. of Austr. iii. pl. 85.

20. A. *ruficauda* (Gould), Proc. Z. S. 1836. p. 106., B. of Austr. iii. pl. 84.

21. A. *Bichenovii* (Jard. & Selby), Ill. Orn. pl. 12. f. 3., Gould, B. of Austr. iii. pl. 80.

22. A. *annulosa* (Gould), Proc. Z. S. 1839. p 143., B. of Austr. iii. pl. 81.

23. A. *castanotis* (Gould), Proc. Z. S. 1836. p. 105., B. of Austr. p. 87.—Loxia guttata *Vieill.* Ois. chant. t. 3.

24. A. *pectoralis* (Gould), Proc. Z. S. 1840. p. 127.

25. A. *temporalis* (Lath.) Lewin, B. of New Holl. pl. 12., Gould, B. of Austr. iii. pl. 82.—Fringilla quinticolor *Vieill.* Ois. chant. t. 15., Jard. and Selby, Illust. of Orn. pl. 12. f. 2.

26. A. *acuticauda* Gould, Proc. Z. S. 1839. p. 142., B. of Austr. iii. pl. 90.—Type of Poëphila *Gould* (1842).

27. A. *personata* Gould, Proc. Z. S. 1842. p. 18., B. of Austr. iii. pl. 91.

28. A. *cincta* Gould, Proc. Z. S. 1837. p. 105., B. of Austr. iii. pl. 93.

29. A. *leucotis* Gould, Proc. Z. S. 1846. p. 106., B. of Austr. iii. pl. 92.

30. A. *Gouldiæ* (Gould), B. of Austr. iii. pl. 88.—Poephila mirabilis *Homb. & Jacq.* Voy. au Pole Sud, Ois. t. 22. f. 2., B. of Austr. iii. pl. 89.

31. A. *malacca* (Linn.) Swains. Pl. enl. 139. f. 3., Edwards's Birds, pl. 355. f. 2., Vieill. Ois. chant. t. 52.—Type of Munia *Hodgs.* (1836.)

32. A. *sinensis* (Briss.).—Amadina melanocephala *M'Clell.* P. Z. S. 1839. 163.; Munia rubroniger *Hodgs.*; Loxia atricapilla *Vieill.* Ois. chant. t. 53., Edw. Birds, pl. 43.

33. A. *minuta* (Meyen), Nov. Act. xvi. Suppl. t. 12. f. 2.

34. A. *molucca* (Linn.) Pl. enl. 139. f. 2.—Munia acuticauda *Hodgs.*

35. A. *punctularia* (Linn.) Swains. Pl. enl. 139. f. 1., Edw. Birds, pl. 40.—Fringilla nisoria *Temm.* Pl. col. 500. f. 2., Vieill. Ois. chant. t. 50.

36. A. *maia* (Linn.) Pl. enl. 109. f. 2., Edw. Birds, pl. 306. f. 1.—Loxia cubeensis *Daud.* Vieill. Ois. chant. t. 56.

37. A. *striata* (Linn.) Pl. enl. 153. f. 1.—Fringilla leuconota *Temm.* Pl. col. 500. f. 1.

38. A. *leucocephala* Raffl. Pl. enl. 109. f. 1.—Loxia maia *Linn.*

39. A. *cucullata* Swains. B. of W. Afr. p. 201.—Loxia prasipteron *Less.*

40. A. *ferruginea* (Sparrm.) Mus. Carls. t. 90, 91.—Fringilla mayanoides *Temm.* Pl. col. 500. f. 3.

41. A. *undulata* (Lath.).—Loxia punctularia var. *Lath.*; Munia lineoventer *Hodgs.*

42. A. *malabarica* (Linn.).—Lonchura cheet *Sykes*; Loxia bicolor *Tick.* Jard. and Selby, Illustr. Ornith. n. s. pl. 34.

43. A. *leucogaster* Blyth, Journ. 1846. p. 286.

44. A. *sanguinolenta* (Temm.) Pl. col. 221. f. 2.

45. A. *cantans* (Gmel.) Brown, Ill. pl. 27., Vieill. Ois. chant. t. 57.

46. A. *variegata* (Vieill.) Ois. chant. t. 51.

47. A. *quinticolor* (Vieill.) Ois. chant. t. 54.

48. A. *castaneothorax* Gould, B. of Austr. pl. 94.—Weebongia albiventer *Less.*; Type of Donacola *Gould* (1841).

49. A. *pectoralis* Gould, B. of Austr. pl. 95.

50. A. *flaviprymna* Gould, B. of Austr. pl. 96.

51. A. *prasina* (Sparr.) Mus. Carls. t. 72, 73.—Loxia quadricolor *Gmel.* Pl. enl. 101. f. 2.; Fringilla sphenura *Temm.* Pl. col. 96.; Erythrura viridis *Swains.* Vieill. Ois. chant. t. 20.; Type of Erythrura *Swains.* (1837.)

Fringilla *Linn.**

Bill short, conical, and broad at the base, with the culmen rounded, sloping, and the sides compressed to the tip, which is acute and entire; the lateral margins straight; the gonys long and ascending; the nostrils basal, lateral, and sunk in a small groove, with the opening generally concealed by the projecting small plumes. *Wings* mostly long and pointed; with the second and third quills equal, and

* Established in 1735. *Struthus* of M. Boie (1826) and *Cœlebs* of Cuvier (1799—1800) are synonymous. It embraces *Carduelis* of Brisson (1760), with which *Acanthis* of Herr Meyer (1815) is coequal; *Loxops* of M. Cabanis (1847); *Emblema* of Mr. Gould (1842); *Chrysomitris* of M. Boie (1828), with which *Spinus* of M. Brehm (1828) is coequal; *Citrinella* of Prince Bonaparte (1838), with which *Spinus* of M. Koch (1816) and *Dryospiza* of Count Keyserling and Dr. Blasius (1840) are synonymous; *Serinus* of M. Brehm (1828); *Ligurinus* of M. Koch (1816), with which *Chloris* of Mœhring (1752) and *Chlorospiza* of Prince Bonaparte (1832) are synonymous; *Petronia* of Dr. Kaup (1829), with which *Gymnornis* of Mr. Hodgson (1844) is synonymous; *Cannabina* of M. Brehm (1828), with which *Linota* of Prince Bonaparte (1838) is synonymous; *Leucosticte* of Mr. Swainson (1831); *Montifringilla* of M. Brehm (1828), with which *Chionospiza* of Dr. Kaup (1829) and *Orites* of Count Keyserling and Dr. Blasius (1840) are coequal; *Fringalauda* of Mr. Hodgson (1836) and *Nephœa* of Mr. Audubon (1839), with which *Struthus* of Prince Bonaparte is coequal.

rather longer than the first. *Tail* more or less long, and generally slightly forked at the end. *Tarsi* shorter than the middle toe, and covered in front with broad scales. *Toes* moderate and slender; the lateral toes nearly equal; the outer toe united at its base; the hind toe long, and armed with a long curved claw.

The species of this division are found in various parts of Europe, Asia, Africa, both North and South America, and Australia. They frequent the open and cultivated places, but some prefer the wild and mountainous districts. They live in flocks, several species sometimes congregating together, especially during the winter months, when some seek the sea-coast; and at this season the sexes of some species form distinct societies. Those that reside in the more northern parts of Europe perform migrations to the warmer provinces, and those of the high altitudes of the mountains seek the lower ground on the approach of winter. Their food consists, during the winter months, of seeds of various plants and trees, as alder, maple, and grains which they seek for on the ground, especially in the stubble lands, but some of them feed on insects and their larvæ during the genial season. The song consists of three or four notes, which in some, though short, possess great sweetness, and are varied in delivery. The nest is formed upon trees, and in bushes of the mountainous districts; others prefer those of the gardens, orchards, and plantations; it is composed of grass, moss, and lichen, interwoven with wool, lined interiorly with feathers and hairs. The eggs are four or five in number.

1. F. *cœlebs* Linn. Pl. enl. 54. f. 1.—Passer spiza *Pall.* Gould, B. of Eur. pl. 187.; Fringilla sylvia *Scop.*; Fringilla nobilis *Schrank.*

2. F. *montifringilla* Linn. Pl. enl. 54. f. 2.—Fringilla lulensis *Linn.* Gould, B. of Eur. pl. 188.; Fringilla flammea *Beseke.*

3. F. *tintillon* Webb & Berth. Voy. Canar. Ois. t. 4. f. 1.

4. F. *spodiogenys* Pr. Bonap.—Fringilla cœlebs *Meth.*

5. F. *erythrophrys* Bl. Journ. A. S. B. 1846. p. 38.

6. F. *formosa* Gould, Voy. of Beagle, Birds, p. .

7. F. *carduelis* Linn. Pl. enl. 4. f. 1, 2. var.—Fringilla elegans *Steph.* Gould, B. of Eur. pl. 196.; F. albo-ochracea *Jacq.* Vögel, t. 5. (var.); F. ochracea *Gmel.*; Type of Carduelis *Briss.* (1760.)

8. F. *orientalis* Eversm. Addend. ad Pall. Zoogr. ii. p. 9.—Passer carduelis var. *Pall.*

9. F. *Burtoni* Gould, Proc. Z. S. 1837. 90.

10. F. *sinica* Linn. Pl. enl. 157. f. 3.—Fringilla kawariba *Temm.* Pl. col. 588. f. 1., Fauna Japonica, Ois. t. .

11. F. *caniceps* Vigors, Proc. Z. S. 1830. 23., Gould's Cent. of Birds, pl. .

12. F. *spinoides* Vigors, Proc. Z. S. 1831. 44., Gould's Cent. of Birds, pl. .

13. F. *coccinea* Gmel. Vieill. Ois. chant. t. 31.—Type of Loxops *Cab.* (1847.)

14. F. *nipalensis* Hodgs. As. Res. xix. 157.—Linota saturata *Blyth*, J. A. S. B. 1842. 192.

15. F. *picta* (Gould), Proc. Z. S. 1842. 17., B. of Austr. pl. . —Type of Emblema *Gould* (1842.).

16. F. *spinus* Linn. Pl. enl. 485. f. 3.—Spinus viridis *Koch.* Gould, B. of Eur. pl. 197.; Type of Chrysomitris *Boie* (1828.).

17. F. *tristis* (Linn.) Pl. enl. 202. f. 2., Wils. Amer. Orn. pl. 1. f. 2., Bonap. Amer. Orn. pl. 6. f. 4., Audub. B. of Amer. pl. 33., Edw. Birds, pl. 274.

18. F. ——— ? Pl. enl. 292.—Fringilla tristis var. β.

19. F. *pinus* Wils. Wils. Amer. Orn. pl. 17. f. 1., Audub. B. of Amer. pl. 180.

20. F. *melanoxantha* Wagl.—Fringilla mexicana *Gmel.* Audub. B. of Amer. pl. 427.

21. F. *psaltria* Say, Pr. Bonap. Amer. Orn. pl. 6. f. 3., Audub. B. of Amer. pl. 400.

22. F. *cucullata* Swains. Zool. Ill. pl. 7.

23. F. *cubæ* Gerv. Mag. de Zool. 1835. Ois. t. 44.

24. F. *magellanica* Vieill. Vieill. Ois. chant. t. 30.—Fringilla icterica *Licht.* Azara, No. 259., Audub. Birds of Amer. pl. 394. f. 2.

25. F. *notata* Dubus, Bull. Acad. Roy. Belg. 1848. p. . Rev. Zool. 1848. p. 215.

26. F.? *ictera* Vieill. Pl. enl. 364.—Fringilla canaria var. β. *Lath.*

27. F. *mexicana* Linn. Pl. enl. 386. f. 1., Edw. Birds, pl. 44.

28. F. *Yarrellii* Audub. B. of Amer. pl. 433. f. 4, 5.—Fringilla mexicana *Audub.*

29. F. *Stanleyi* Audub. Syn. B. N. Amer. p. 118.

30. F. *luxuosa* Less. Rev. Zool. 1839. 41.

31. F. ? *flaveola* Linn.

32. F. *citrinella* Linn. Pl. enl. 658. f. 2., Gould, B. of Eur. pl. 198.—Fringilla brumalis *Bechst.*; F. alpina *Scop.*; Citrinella serinus *Pr. Bonap.*; Type of Citrinella *Bonap.* (1838.)

33. F. *serinus* Linn. Pl. enl. 658. f. 1., Gould, B. of Eur. pl. 195.—Serinus flavescens *Gould*, Pr. Bonap. Fauna Ital. t. .; S. brumalis *Strickl.*; S. hortulanus *Koch*; S. meridionalis *Brehm*; Type of Serinus *Brehm* (1828.).

34. F. *islandica* Faber, Bonap.—Loxia serinus *Brün.*

35. F. *citrinelloides* Rüpp. Faun. t. 34. f. 1.

36. F. *nigriceps* Rüpp. Faun. t. 34. f. 2.

37. F. *xanthopygia* Rüpp. Faun. t. 35. f. 1.

38. F. *tristriata* Rüpp. Faun. t. 35. f. 2.

39. F. *lutea* Licht. Pl. col. 365.

40. F. *chloris* (Linn.) Koch, Pl. enl. 267. f. 2.—Chloris flavigaster *Swains.* Gould, B. of Eur. pl. 200.; Type of Ligurinus *Koch* (1816).

41. F. *incerta* (Risso), Pr. Bonap. Fauna Ital. t. .—Fringilla olivacea *Rafin.*

42. F. *atrata* (D'Orb.) Voy. dans l'Amér. Mér. t. 48. f. 2.

43. F. *analis* (D'Orb.) Voy. dans l'Amér. Mér. t. 48. f. 1.

44. F. *brasiliensis* (Gmel.) Pl. enl. 321. f. 1., Spix, Av. Bras. t. 61. f. 1, 2., Edw. Birds, pl. 352. f. 1.

45. F. *campestris* Spix, Av. Bras. t. 61. f. 3.

46. F. *lutiventris* Meyen, Nov. Act. Nat. Cur. xvi. Suppl. t. 12. f. 3.
47. F. *brevirostris* Gould, Voy. Beagle, Birds, p. .
48. F. *petronia* Linn. Pl. enl. 225.—Fringilla stulta *Gmel.* Gould, B. of Eur. pl. 186.; Petronia rupestris *Bonap.*; Fringilla leucura *Gmel.*; F. bononiensis *Gmel.*; Type of Petronia *Kaup* (1829.).
49. F. *superciliaris* Hay. Journ. A. S. B. xiv. p. 553.
50. F. *flavicollis* Frankl. Proc. Z. S. 1832. p. 120.; Type of Gymnornis *Hodgs.* (1844.)
51. F. *cannabina* Linn. Pl. enl. 151. f. 1. & 485. f. 2. — Fringilla linota *Gmel.* Gould, B. of Eur. pl. 191.; Passer papaverina *Pall.*; Fringilla minima *Bodd.*; F. argentoratensis *Gmel.*; Type of Cannabina *Brehm* (1828.).
52. F. *flavirostris* Linn. Gould, B. of Eur. pl. 192. — Fringilla montium *Gmel.*
53. F. *linaria* Linn. Pl. enl. 485. f. 2., Wils. Amer. Orn. pl. 30. f. 4. — Fringilla rufescens *Vieill.* Sav., Gould, B. of Eur. pl. 194.; Linaria rubra *Gesn.*, Audub. B. of Amer. pl. 375.
54. F. *borealis* Vieill. Vieill. Gal. des Ois. t. . — Fringilla linaria *Savi*, Audub. B. of Austr. pl. 400. f. 2.
55. F. *canescens* (Gould), B. of Eur. pl. 193.
56. F. *pusilla* (Pall.) Zoogr. ii. p. 28. t. .
57. F. *Hornemanii* Holb. Isis, 1845. p. 759.
58. F. *fusca* Blyth, Journ. As. Soc. Beng. 1842. 192.
59. F. *rubrifrons* Hay, Madr. Journ. Lit. & Sci.
60. F. *caniceps* (D'Orb.) Voy. l'Ile de Cuba, Ois. pl. 16.
61. F. *gularis* (A. Smith), Rep. S. Afr. Exp. p. 49.
62. F. *atrogularis* (A. Smith), Rep. S. Afr. Exp. p. 49.
63. F. *arctoa* (Pall.) Zoogr. ii. p. 21.
64. F. *Gebleri* Brandt, Bull. Acad. Sci. Petersb. 1842. p. 18. — Passer arctous var. *Pall.*
65. F. *brunneonucha* Brandt, Bull. Acad. Sci. Petersb. 1842. p. 18. — Passer arctous var. *β. Pall.*
66. F. *griseonucha* Brandt, Bull. Acad. Sci. Petersb. 1842. p. 19. — Passer arctous var. *γ.*
67. F. *arvensis* Kittl. Mém. Acad. Pétersb. ii.
68. ? F. *testacea* Jacq. Jacq. t. 12.
69. ? F. *minima* Linn. Jacq. t. 13.
70. F. *tephrocotis* Swains., Fauna Bor. Amer. Birds, pl. 50.— Type of Leucosticte *Swains.* (1831.).
71. F. *griseogenys* Gould, Proc. Z. S. 1843. p. 104., Voy. of Sulph. Birds, pl. .
72. F. *anatoides* (Lafr.) Rev. Zool. 1847. p. 75.
73. F. *inornata* (Lafr.) Rev. Zool. 1847. p. 75.
74. F. *nivalis* Linn. — Passer alpicola *Pall.*; Fringilla saxatilis *Koch*; Plectrophanes fringilloides *Boie*, Gould, B. of Eur. pl. 189.; Type of Montifringilla *Brehm* (1828.).
75. F. *nemoricola* Hodgs. As. Res. xix. p. .—Type of Fringalauda *Hodgs.* (1836.)
76. F. *hyemalis* Linn.— Fringilla hudsonia *Forst.* Wils. Amer. Orn. pl. 16. f. 6.; Emberiza nivalis *Wils.* Audub. Birds of Amer. pl. 13., Gould, Birds of Eur. pl. 190.; Type of Nephæa *Audub.* (1839.)
77. F. *oregona* (Towns.) Audub. B. of Amer. pl. 398.
78. F.? *crispa* Linn. Edw. Birds, pl. 271. f. 1.
79. F. *obscura* Vieill. Edw. Birds, pl. 270. f. 2. — Fringilla atra *Gmel.*
80. F. *longirostris* Gmel. Briss. Orn. iii. t. 15. f. 2.
81. F. *cinerea* Swains. Philos. Mag. 1827. p. 435. — Junco phænotus *Wagl.*; Type of Junco *Wagl.* (1831.)

PASSER *Briss.**

Bill strong, subconical, and broad at the base, with the culmen rounded, slightly arched, and the sides compressed to the tip, which is slightly emarginated; the lateral margins straight; the gonys long and curved upwards; the nostrils basal, lateral, with the opening partly covered by the frontal plumes. *Wings* moderate, with the second and third quills rather longer than the first. *Tail* moderate, and even or slightly forked. *Tarsi* strong, nearly the length of the middle toe, and covered with transverse scales. *Toes* moderate; the lateral toes nearly equal; the claws moderate and acute.

The species of this division are found in Europe, Asia, and Africa. Most of the species reside in the cultivated and inhabited places, even in the midst of cities; while others never venture near the dwellings of man. Their food consists of all kinds of grains, which they generally seek for on the ground, and seeds as well as the buds of trees. Their young are principally fed with insects, both in the perfect and imperfect states. The nest is placed in holes in walls of buildings, or in the thatch, but sometimes it is formed upon trees or hedges. Others prefer the holes of trees. It is composed of hay, straw, and feathers, loosely put together; but more pains are taken with it if placed in a tree. The eggs are four or five in number.

1. P. *domesticus* Linn. Pl. enl. 55. f. 1. — Fringilla candida *Sparm.* Pl. enl. 6. f. 1., Gould, B. of Eur. pl. 184. f. 1.
2. ? P. *italicus* Vieill. Stor. degli Ucc. t. 340. — Fringilla cisalpina *Temm.* Gould, B. of Eur. pl. 185. f. 2.
3. P. *jagoensis* Gould, Voy. Beagle, Birds, pl. 31.
4. ? P. *salicarius* Vieill. Gould, B. of Eur. pl. 185. f. 1. — Fringilla hispaniolensis *Temm.*; F. sardoa *Savi.*
5. P. *montanus* (Linn.) Pl. enl. 267. f. 1., Edw. Birds, pl. 269.

* Established by Brisson in 1760. *Pyrgita* of Cuvier (1817) is coequal.

—Passer montanina *Pall.*, Gould, B. of Eur. pl. 184. f. 2.; Fringilla campestris *Schr.*; Loxia hamburgia *Gmel.*

6. P. *cinnamomeus* Gould, P. Z. S. 1835. 185. — Passer indicus *Jard. & Selby*, Ill. Orn. pl. 118.; Fringilla inda *Licht.* ?

7. P. *simplex* Swains. — Pyrgita Swainsoni *Rüpp.* Faun. t. 33. f. 2.; Pyrgita gularis *Less.*

8. P. *concolor* (Jard.) Madr. Journ. Lit. & Sci. 1840. 28.

9. P. *pyrrhopterus* (Less.) Less. Zool. Belang. Voy. p. 271.

10. P. *arcuatus* (Gmel.) Pl. enl. 230. f. 1.

11. P. *rutilans* (Temm.) Strickl. Pl. col. 588. f. 2.

12. P. *pileatus* (Bodd.) Pl. enl. 386. f. 2. — Emberiza nuchalis *Temm.*

13. P. *molitensis* (A. Smith), Rep. S. Afr. Exp. p. 50., Illustr. Zool. of S. Afr. Birds, pl. 114.

14. P. *diffusus* (A. Smith), Rep. S. Afr. Exp. p. 50.

15. P. *teydea* Webb & Berth. Voy. Isl. Canar. t. 1.

ZONOTRICHIA *Swains.**

Bill short and perfectly conic, thick at the base, and rather conical, with the culmen sloping, and the sides compressed to the tip, which is entire; the lateral margins nearly straight; the gonys long and ascending; the nostrils basal, lateral, and sunk in a small groove, with the opening oval and generally exposed. *Wings* moderate, with the first quill shorter than the second, third, and fourth, which are the longest. *Tail* rather long, broad, and nearly even at its end. *Tarsi* shorter than the middle toe, rather strong, and covered with broad scales. *Toes* long and slender, with the inner toe shorter than the outer; the outer toe united at its base; the hind toe long, and armed with a long, curved, acute claw.

The species which form this genus are found in North and South America. Those of the northern parts of the continent migrate on the approach of winter to the southern districts, which change of abode is sometimes performed in the night. They live singly, or in small flocks, on the bushes or thickets, especially those on the sides of rivers or in swampy situations, hopping and searching among the branches for insects and their larvæ. They also examine the fallen and withered leaves, or among the roots and dead branches of trees, for their food, which consists of grass seeds, berries, and insects; sometimes the latter are pursued on the wing. Their flight is low and undulating, and their song consists of a series of brilliant and clear notes, usually poured forth from the summit of a bush, and in some instances continued for a considerable period. The nest is large, generally placed on the ground among moss or tall grass, and composed of coarse interwoven with fine grass, lined interiorly with fine fibrous roots and feathers. The female deposits four to seven eggs.

1. Z. *albicollis* (Gmel.) Wils. Amer. Orn. pl. 22. f. 2. — Fringilla pennsylvanica *Lath.* Edw. Birds, pl. 304., Audub. B. of Amer. pl. 8.; Fringilla striata *Gmel.*

2. Z. *melodia* (Wils.) Wils. Amer. Orn. pl. 16. f. 4. — Fringilla fasciata ? *Gmel.* Audub. B. of Amer. pl. 25.; Passerina musica *Vieill.*

3. Z. *graminea* (Gmel.) Wils. Amer. Orn. pl. 31. f. 5., Audub. B. of Amer. pl. 94.

4. Z. *leucophrys* (Forst.) Wils. Amer. Orn. pl. 31. f. 4.

5. Z. *Gambelii* (Nutt.) Mar. Orn. i. p. 556. 2nd edit. — Fringilla leucophrys *Auct.* (in part), Audub. B. of Amer. pl. 114.

6. Z. *matutina* (Licht.) Kittl. Kupf. der Vög. t. 23. f. 3. — Tanagra ruficollis *Spix*, Av. Bras. t. 53. f. 3.; Pyrgita peruviana *Less.* Azara, No. 135.; Fringilla australis ? *Lath.*; Zonotrichia subtorquata *Swains.*

7. Z. *canicapilla* (Gould), Voy. Beagle, Birds, p. 91.

8. Z. *strigiceps* (Gould), Voy. Beagle, Birds, p. 92.

9. Z. *cinerea* (Gmel.).

10. Z. *guttata* (Nutt.) Gamb. — Fringilla cinerea *Audub.* (non Gmel.) Audub. B. of Amer. pl. 390. f. 1.

11. Z. *querula* (Nutt.) Gamb. Man. Orn. i. p. 555. — Fringilla Harrisii *Audub.* B. of Amer. 2nd edit. pl. 484.

12. Z. *chlorura* ? (Audub.) Gamb. Journ. Acad. Nat. Sci. Phil. i. p. 51. pl. 9. f. 1. — Fringilla Blandingiana *Gamb.* Acad. Nat. Sci. Philad. i. p. 260.; Fringilla chlorura *Audub.* Orn. Biogr. v. p. 336.

13. Z. *atricapilla* (Gmel.).

14. Z. *aurocapilla* (Nutt.) Gamb. — Fringilla atricapilla *Audub.* non Lath.) B. of Amer. pl. 394. f. 3.

15. Z. *Mortoni* (Audub.) Orn. Biogr. v. p. 312., B. of Amer. 2nd edit.

16. Z. *pusilla* (Wils.) Wils. Amer. Orn. pl. 16. f. 2., Audub. B. of Amer. pl. 139. — Fringilla juncorum *Nutt.*; Type of Spizella *Pr. Bonap.* (1832.)

* Established by Mr. Swainson (1831). It embraces *Passerella* of Mr. Swainson (1837), *Spizella* and *Passerculus* of the Prince of Canino (1838), and *Chondestes* of Mr. Swainson (1831).

17. Z. *socialis* (Wils.) Wils. Amer. Orn. pl. 16. f. 5., Audub. B. of Amer. pl. 104.

18. Z. *monticola* (Gmel.) Pl. enl. 223. f. 2., Audub. B. of Amer. pl. 188.—Fringilla canadensis *Lath.*; Fringilla arborea *Wils.* Amer. Orn. pl. 16. f. 3.; Fringilla hyemalis? *Gmel.*; Passerina monticola *Vieill.*

19. Z. *pallida* (Swains.) Faun. Bor. Amer. 251., Audub. B. of Amer. pl. 398.

20. Z. *Shattuckii* (Audub.) B. of Amer. 2nd edit. pl. 493.

21. Z. *iliaca* (Merr.)—Fringilla rufa *Wils.* Amer. Orn. pl. 22. f. 4.; Fringilla ferruginea *Gmel.* Edwards's Birds, pl. 354. f. 1.; Emberiza pratensis *Vieill.* Audub. B. of Amer. pl. 108.; Type of Passerella *Swains.* (1837.)

22. Z. *unalaschensis* (Lath.).

23. Z. *Townsendii* (Audub.) Gamb.—Fringilla meruloides *Vigors*, Zool. Beechy's Voy., Audub. B. of Amer. pl. 424. 7.

24. Z. *savanna* (Wils.) Wils. Amer. Orn. pl. 34. f. 4. & pl. 22. f. 3.—Passerina savannarum *Vieill.* Audub. B. of Amer. pl. 109.; Type of Passerculus *Pr. Bonap.* (1838.).

25. Z. *palustris* (Wils.) Wils. Amer. Orn. pl. 22. f. 1., Audub. B. of Amer. pl. 64.—Fringilla Georgiana *Lath.*

26. Z. *Lincolnii* (Audub.) B. of Amer. pl. 193.

27. Z. *grammaca* (Say). Pr. Bonap. Amer. Orn. pl. 5. f. 3.—Chondestes strigata *Swains.* Audub. B. of Amer. pl. 390. f. 1.; Type of Chondestes *Swains.* (1831.).

28. Z.? *dominicensis* (Gmel.) Pl. enl. 341. f. 2.

29. Z.? *ludovicia* (Linn.) Pl. enl. 158. f. 1.

Ammodromus *Swains.**

Bill more or less conical and straight, with the culmen slightly keeled at the base, and curved, and the sides compressed to the tip, which is acute; the lateral margins nearly straight; the gonys long and ascending; the nostrils basal, lateral, and placed in a small groove, with the opening oval and exposed. *Wings* short, with the first quill shorter than the three next, which are of nearly equal length; sometimes the first and second are shorter than the third and fourth. *Tail* rather lengthened, and the lateral feathers graduated, with the end of each feather sometimes acuminated. *Tarsi* as long as the middle toe, strong, and covered in front with scarcely divided scales. *Toes* long and slender; the outer toe rather longer than the inner, and united at its base; the hind toe long, and armed with a long, slightly curved, acute claw.

The species are found in South and North America, where some inhabit the low rush-covered sea-islands, keeping almost continually within the boundaries of tide-water. They course along the margin and holes and interstices of the weeds and sea-wrack, with a rapidity equalled only by the nimblest of the sand-pipers, and very much in their manner. At other times they seek the rankest growth of grass and sea-weeds, and climb along the stalks of the rushes with as much dexterity as they run along the ground. Other species prefer the pine-barrens, where they are always seen on the ground, passing through the tufts of grass with great swiftness. Their food consists of sea-animals, as shrimps, minute mollusca, and small crabs, &c.

1. A. *caudacutus* (Gmel.) Swains. Wils. Amer. Orn. pl. 34. f. 3., Audub. B. of Amer. pl. 149.

2. A. *maritimus* (Wils.) Swains. Wils. Amer. Orn. pl. 34. f. 2., Audub. B. of Amer. pl. 93.

3. A. *bimaculatus* (Swains.) Ann. of Phil. 1827. p. .

4. A. *longicaudatus* (Gould), Voy. Beagle, Birds, pl. 29.

5. A. *manimbe* (Licht.) Azara, No. 141., Voy. Beagle, Birds, pl. 30.

6. ? A. *æstivalis* (Licht.) Cat. Dupl. Berl. Mus. p. 25.

7. A. *Macgillivrayi* (Audub.) B. of Amer. pl. 355.

8. A. *passerinus* (Wils.) Pr. Bonap. Wils. Amer. Orn. pl. 24. f. 5. — Fringilla caudacuta? *Lath.* Audub. B. of Amer. pl. 130.; F. savannarum? *Gmel.*; Coturniculus lixicrus *Gosse*, B. of Jam. p. ., Illustr. of B. of Jam. pl. 60.; Type of Coturniculus *Pr. Bonap.* (1838.)

9. A. *Henslowi* (Audub.) B. of Amer. pl. 170.

10. A. *LeConteii* (Audub.) B. of Amer. pl. 488. 2d edit.

11. A. *Bachmanii* (Audub.) B. of Amer. pl. 165.—Type of Peucæa *Audub.* (1839.)

Spiza *Pr. Bonap.*†

Bill short, broad at the base, with the culmen rounded, and the sides compressed to the tip, which is acute; the lateral margin nearly straight, and angulated at the base; the gonys long and ascending; the

* Established by Mr. Swainson in 1827. It embraces *Coturniculus* of the Prince of Canino (1838), and *Peucæa* of Mr. Audubon (1839).

† Established by the Prince of Canino in 1828. *Passerina* of Vieillot (1816) is synonymous. It embraces *Paroaria* of the Prince of Canino (1832), which name was changed in 1847, by M. Cabanis, to *Calyptrophorus*.

nostrils basal, lateral, with the opening oval and exposed. *Wings* moderate, with the second and third quills longest; the first equal in length to the fourth. *Tail* moderate and even. *Tarsi* shorter than the middle toe, and covered with broad scales. *Toes* rather long; the outer toe longer than the inner, and united at the base; the hind toe long, and armed with a moderate claw.

The species that compose this genus are inhabitants of both North and South America. They are found in open and cultivated places that border woods, gardens, and orchards, seeking on the ground for various kinds of grain. They are also very destructive to figs and grapes, as soon as the fruits are ripe, and may be observed pursuing insects on the wing at twilight. Their song is sprightly, and often repeated, and is usually emitted while perched on the summit of an orange tree or other bush. Those of the northern parts of America perform migrations to the more genial regions on the approach of winter. They undergo great change of plumage according to the season; the perfect or summer plumage being very gay, and highly coloured. The nest is placed in the lower part of an orange tree or other bush; it is composed of fine fibrous roots or horse-hair, and outwardly formed of fine grass. The female deposits four to six eggs.

1. S. *cyanea* (Linn.) Pr. Bonap. Edw. Birds, pl. 273. f. 2.—Emberiza cyanella *Gmel.* Wils. Amer. Orn. pl. 6. f. 5.; Emberiza cærulea *Gmel.* Pr. Bonap. Amer. Orn. pl. 11. f. 3.; Tanagra cærulea *Gmel.* Audub. B. of Amer. pl. 74.
2. S. *ciris* (Linn.) Pr. Bonap. Pl. enl. 159. f. 1, 2., Wils. Amer. Orn. pl. 24. f. 1, 2., Audub. B. of Amer. pl. 53., Edw. Birds, pl. 130. 273. f. 1.
3. S. *amœna* (Say), Pr. Bonap. Amer. Orn. pl. 6. f. 4., Audub. B. of Amer. pl. 398. f. 3.
4. S. *versicolor* Pr. Bonap. Proc. Z. S. 1837. 120.
5. S. *Leclancherii* Lafr. Rev. Zool. 1840. 26., Mag. de Zool. 184.
6. S. *cucullata* (Lath.) Pr. Bonap. Pl. enl. 103.—Fringilla dominicana cristata *Bodd.* Vieill. Ois. chant. t. 70.; Type of Paroaria *Pr. Bonap.* (1832.)
7. S. *dominicana* (Linn.) Edwards's Birds, pl. 127.—Coccothraustes brasiliensis *Briss.* Vieill. Ois. chant. t. 69.
8. S. *larvata* (Bodd.) Pl. enl. 55. f. 2.—Carduelis dominicanus *Briss.*

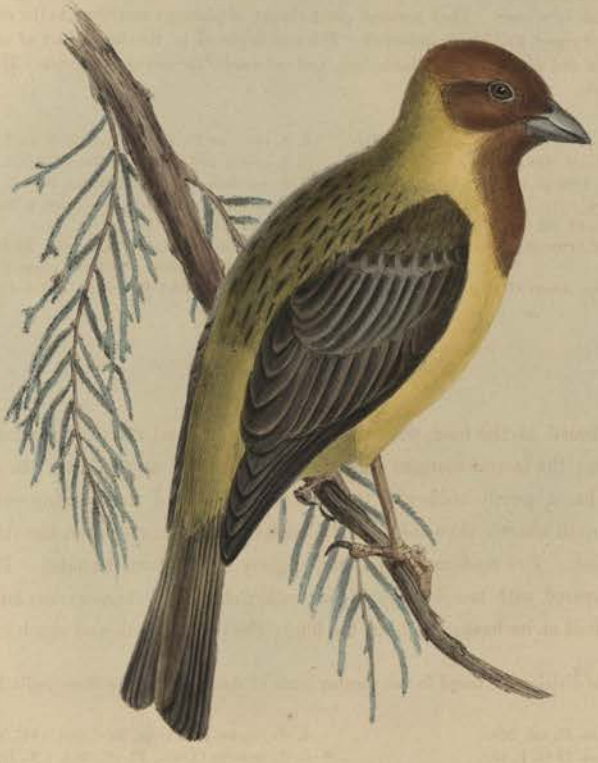
Tiaris *Swains.**

Bill short, conic, and broad at the base, with the culmen sloping, and the sides gradually compressed to the tip, which is entire; the lateral margins sinuated and angulated at the base; the gonys long and ascending; the nostrils basal, partly hidden by the frontal plumes, and the opening rounded. *Wings* moderate, with the first quill shorter than the second, which is rather shorter than the third and fourth; these are equal and longest. *Tail* moderate, even, and slightly rounded on the sides. *Tarsi* the length of the middle toe, and covered with broad scales. *Toes* rather short and slender; the lateral toes nearly equal; the outer one united at its base; the hind toe long; the claws small, and much curved.

The species of this division are found in the warmer parts of America and the West India Islands.

1. T. *ornatus* (Temm.) Swains. Pl. col. 208.
2. T. *cruentus* Less. Rev. Zool. 1844. p. 435.
3. T. *omissa* Jard. Ann. Nat. Hist. 1847. p. 332.
4. T. *funerea* De Tarrag. Rev. Zool. 1847. p. 184.
5. T. *jacarina* (Linn.) Pl. enl. 224. f. 3., Edw. Birds, pl. 306. f. 2.—Fringilla splendens *Vieill.*

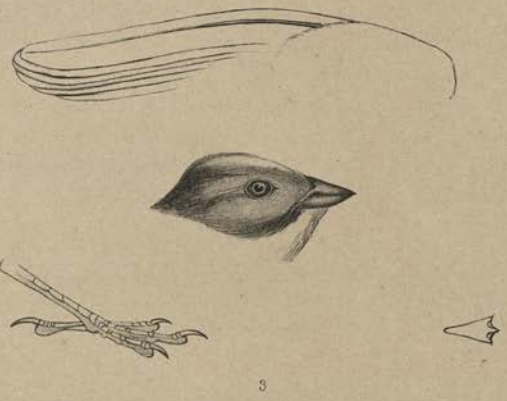
* Established by Mr. Swainson in 1827.

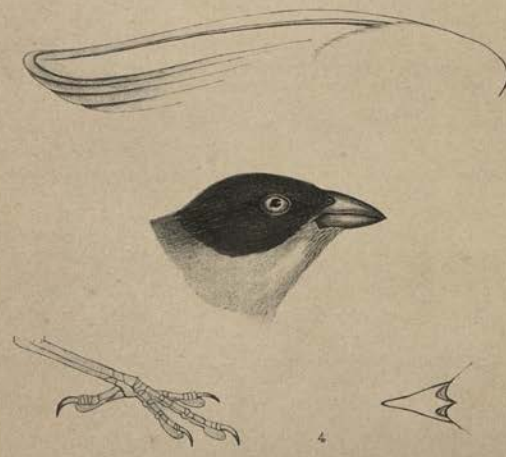


C. Bellmandel's Patent Lithotint.

EUSPIZA
aurea (Eversm.)

87954





C.Hullmandel's Patent Lithotint.

1. GUBERNATRIX cristatella. 2. FRINGILLARIA flaviventris. 3. EMBERIZA citrinella.
4. EUSPIZA melanocephala. 5. PLECTROPHANES lapponicus.

The fifth Subfamily,

EMBERIZINÆ, or BUNTINGS,

have the Bill conical, acute, compressed, with the culmen more or less straight to the tip; the lateral margins sinuated, and more or less inflected; the interior of the upper mandible furnished with a palatine knob, which is more or less apparent; the Wings moderate, and somewhat pointed; the Tarsi about the length of the middle toe, and scutellated; the hind Toe longer than the inner, and robust; and the Claws slender and more or less curved.

EUSPIZA *Pr. Bonap.**

Bill moderate, conic, compressed, with the culmen more or less arched to the tip, which is slightly emarginated; the lateral margins slightly sinuated and angulated at the base, and that of the lower mandible somewhat inflected near the middle; the nostrils basal, lateral, oval, and partly hidden by the frontal plumes. *Wings* moderate, with the first quill rather shorter than the second, from this latter to the fourth nearly equal and longest. *Tail* lengthened and emarginated. *Tarsi* as long as the middle toe, and covered with lengthened scales. *Toes* moderate, with the lateral ones equal and strongly scutellated; the hind toe lengthened and strong; the claws slender, moderate, and somewhat curved.

The birds of this genus are found in Asia, the eastern countries of Europe, and the northern and southern parts of America. They frequent the bushes or the level cultivated fields of the open countries, but seek their food, which consists of seeds and insects, on the ground. Some are stated to feed on the fruits of the almond and fig trees. Their nests are formed on the ground, of dry leaves, &c.

1. E. *melanocephala* (Scop.) Pr. Bonap. Expéd. de Morée, t. 6. f. 1.—Fringilla crocea *Vieill.* Ois. Chant. t. 27.; Xanthornis caucasicus *Pall.* Zoogr. t. 19.; Emberiza granativora *Menetr.*; Tanagra melanictera *Güldenst.*
2. E. *icterica* (Eversm.) Evers. Add. Pall. Zoogr. fasc. ii. p. 10.
3. E. *aureola* (Pall.) Pall. Zoogr. 11. 52. t. 50., Kittl. Kupf. Nat. Vog. t. 22. f. 1.—Fringilla pinetorum *Lepech.*; Emberiza sibirica *Gmel.*
4. E. *Lathami* (Gray), Gray Zool. Misc. 1. p. 2.—Emberiza cristata *Vigors*, Gould's Century of Birds, pl.; E. suberistata *Sykes*; E. erythroptera *Jard. & Selby*, Ill. Ornith. pl. 132.; E. nipalensis *Hodgs.* As. Res. xix. p. 157.; Type of Melophus *Swains.* (1837).
5. E. *americana* (Gmel.) Pr. Bonap., Wils. Amer. Orn. pl. 3. f. 2.—Fringilla flavicollis *Gmel.*; Passerina nigricollis *Vieill.*; Emberiza mexicana *Lath.* Syn. pl. 44.
6. E. *atricapilla* (Gmel.) Lath. Syn. pl. 45.—Emberiza coronata *Pall.*
7. E. *Townsendii* (Aud.) Pr. Bonap., Audub. B. of Amer. pl. 40. f. 3.
8. E. *fruticeti* (Kittl.) Kittl. Kupf. der Vög. t. 23. f. 1.—E. luctuosa *Gerv. & Eyd.* Mag. de Zool. 1836. t. 71.
9. E. *alaudina* (Kittl.) Kittl. Kupf. der Vög. t. 23. f. 2.—E. guttata *Meyen*, Nov. Act. & Suppl. t. 12. f. 1., Mag. de Zool. 1836. t. 70.; Fringilla erythrorhyncha *Less.*; Fr. campestris *Pr. Bonap.* Griff. An. Kingd. Birds, ii. pl.
10. E. *carbonaria* (Lafr. & D'Orb.) Voy. de l'Amér. Mér. Ois. t. 45. f. 1.
11. E. *? fulviceps* (Laft. & D'Orb.) Voy. de l'Amér. Mér. Ois. t. 46. f. 2.
12. E. *? hypochondria* (Lafr. & D'Orb.) Voy. de l'Amér. Mér. Ois. t. 45. f. 1.
13. E. *? griseo-cristata* (Lafr. & D'Orb.) Voy. de l'Amér. Mér. Ois. t. 47. f. 1.
14. E. *? atriceps* (Lafr. & D'Orb.) Voy. de l'Amér. Mér. Ois. t. 47. f. 2.

* Established by the Prince of Canino (*Saggio distr. Met. Anim. Vert.*) in 1832. It embraces Mr. Swainson's genus *Melophus*, proposed (*Class. of Birds*, ii. 290.) in 1837.

Emberiza *Linn.**

Bill small, conical, acute, compressed; the palate of the upper mandible furnished with a prominent bony knob; the culmen more or less straight to the tip, and the lateral margins nearly straight, angulated at the base, and much inflected, especially that of the lower mandible, which gives the tip an appearance of being slightly turned upwards; the nostrils basal, rounded, and partly hidden by the frontal plumes. *Wings* moderate, with the first quill shorter than the second and third, which are the longest. *Tail* lengthened, and rather forked, with the feathers narrowed and somewhat lanceolate. *Tarsi* as long as the middle toe. *Toes* moderate, the lateral ones equal and rather short; the claws rather long, compressed, and slender, that of the hind toe nearly equalling the toe in length.

The species of this genus are scattered both in the Old and New World, but especially in the former. They collect together in flocks by themselves, or with other seed-feeding birds, on the approach of winter; and remain in society till the return of spring, when they scatter themselves singly or in pairs over the open countries. Their flight is rapid, and is generally performed in short distances from the upper twig of one bush to that of another; in their migrations, however, their flight is usually undulated and quick. The food of these birds consists principally of seeds of various plants, grasses, and reeds; and, in the warmer parts of the year, insects and their larvæ form a portion of their subsistence. They generally build their nest in low bushes, or upon the ground among the tufts of grass; it is composed of dried grasses, internally lined with finer grass and hairs: the eggs are usually from four to six in number.

1. E. *Citrinella* Linn. Pl. enl. 30. f. 1.—Type of Citrinella *Kaup* (1829).
2. E. *Cirlus* Linn. Pl. enl. 653.—Emberiza eleathorax *Bechst.*; Type of Cirlus *Kaup* (1829).
3. E. *hortulana* Linn. Pl. enl. 247. f. 1.—Emberiza chlorocephala *Gmel.*; E. Tunstallii *Lath.*; E. malbeyensis *Sparr.* Mus. Carls. t. 1.; E. badensis *Gmel.*
4. E. *Cia* Linn. Pl. enl. 30. f. 2. 511. f. 1.—Emberiza barbata *Scop.*; E. lotharingica *Gmel.*; Type of Cia *Kaup* (1829).
5. E. *pithyornis* Pall. Zoogr. 11. 37. t. 44.—Fringilla dalmatica *Gmel.*; Emberiza leucocephala *Gmel.* Nov. Com. Petrop. xv. 480. t. 23. f 3.
6. E. *rustica* Pall, Zoogr. 11. 43. t. 47. f. 2., Kittl. Kupf. Nat. Vög. t. 22. f. 2.—Emberiza Lesbia *Caloi.*; E. borealis *Zett.*
7. E. *fucata* Pall. Zoogr. 11. 41. t. 46.—Emberiza Lesbia *Temm.* nec *Gmel.*; E. Cia *Jerd.*?
8. E. *Lesbia* Gmel. Pl. enl. 656. f. 2.; Type of Spina *Kaup* (1829).
9. E. *provincialis* Gmel. Pl. enl. 656. f. 1.—Type of Orospina *Kaup* (1829); Emberiza Durazzi *Pr. Bonap.*? Faun. Ital. Av. t. 6.?
10. E. *chrysophrys* Pall. Zoogr. 11. 46. t. 48. f. 2., Sely's Faun. Belg. t. 4.
11. E. *Bonapartei* Barth. de la Pomm.
12. E. *cinerea* Strickl. Proc. Z. S. 1836. 99.
13. E. *hyperborea* Pall. Zoogr. 11. 35. t. 43. f. 2.
14. E. *pusilla* Pall. Zoogr. 11. 42. t. 47. f. 1.
15. E. *spodocephala* Pall. Zoogr. 11. 51. t. 49. f. 2. (Euspiza?)
16. E. *rutila* Pall. Zoogr. 11. 53. t. 51. (Euspiza?)
17. E. *personata* Temm. Pl. col. 580.
18. E. *elegans* Temm. Pl. col. 583. f. 1.
19. E. *variabilis* Temm. Pl. col. 583. f. 2.
20. E. *arctica* Lath.—Emberiza chrysops *Pall.* Zoogr. 11. 45. t. 48. f. 1.; E. sandwichensis *Gmel.*
21. E. *schœniclus* Linn. Pl. enl. 247. f. 2., 497. f. 2.—Emberiza arundinacea *Gmel.*; E. passerina *Pall.*; Type of Cynchramus *Kaup*; (1829).
22. E. *pyrrhuloides* Pall. Zoogr. 11. 49. t. 49. f. 1.—Emberiza caspia *Menetr.*
23. E. *palustris* Savi, Ornith. Provenc. t. 114. bis.—Emberiza atrata *Rafin.*?
24. E. *miliaria* Linn. Pl. enl. 233.—Emberiza Calandra *Linn.*; Miliaria europæa *Swains.*; Type of Spinus *Mœhr.* (1752).
25. E. *melanodera* Quoy et Gaim. Zool. de l'Uranie, p. 109., Voy. of Beagle, Birds, pl. 32.
26. E. *xanthogramma* (G. R. Gray), Voy. of Beagle, Birds, pl. 33.
27. ? E. *sinensis* Gmel.
28. ? E. *fasciata* Gmel.
29. ? E. *asiatica* Lath.
30. ? E. *chrysoptera* Lath. Portl. Voy. t. p. 35.
31. E. *brunniceps* Brandt, Bull. de l'Acad. Imp. de Petersb. (Euspiza?)

Gubernatrix *Less.*†

Bill moderate, strong, compressed, with the culmen much arched to the tip; the palate of the upper mandible furnished with a small bony knob; the lateral margins nearly straight, but angulated at the

* Linnæus established this genus in 1748. In 1826, M. Boie used *Cynchramus;* and, in 1829, M. Kaup subdivided (*Naturl. Syst.*) the genus into the following subgenera, viz. *Cia, Citrinella, Orospina, Cirlus, Spina,* and *Cynchramus.* It also comprises *Spinus* of Mœhring (1752), which is equal to *Miliaria* of M. Brehm (1831).

† Proposed by M. Lesson (*Compl. de Buff.* viii. 295.) in 1839. Being unacquainted with M. Lesson's name, I had suggested that of *Lophocoryphus* (1840).

base, that of the lower mandible much inflected; the nostrils basal, lateral, and partly hidden by the frontal plumes. *Wings* moderate, with the third and fourth quills equal and longest. *Tail* moderate and rounded. *Tarsi* the length of the middle toe, and strongly scutellated. *Toes* long and slender, with the lateral ones equal; the hind toe long and strong; and the claws moderate and curved.

This species is peculiar to South America, about the twenty-ninth degree of latitude, where it frequents in pairs the lower portions of the open copses, flying from one to another. They are often seen on the ground, which they examine for insects and small grains. Their flight is slow, and not extended to any distance.

G. *cristatella* (Vieill.) G. R. Gray, Vieill. Gal. des Ois. t. 67.—Emberiza Gubernatrix *Temm.* Pl. col. 63, 64.; E. cristata *Swains.* Zool. Ill. 148., Azara, No. 129.

Fringillaria *Swains.**

Bill short, conical, acute, with the culmen and gonys straight, and equally sloping to the tip; the lateral margins straight, and the base angulated, that of the lower mandible inflected; the nostrils basal, lateral, and concealed by the frontal feathers. *Wings* short, with the two first quills graduated, and the third and fourth the longest; the tertials nearly as long as the quills. *Tail* lengthened, with the end nearly even or slightly forked. *Tarsi* slender, longer than the middle toe. *Toes* small and slender, with the lateral ones short and equal; and the claws small and short.

The continent of Africa is the peculiar habitat of the species of this genus, but their peculiarities of manners and habits are at present unknown. Their food is no doubt similar to that of the species of the other genera of this subfamily.

1. F. *flaviventris* (Vieill.) Vieill. Ency. Méth. 929., Pl. enl. 664. f. 2.—Emberiza capensis var. *Lath.*; Fringillaria capensis *Swains.*
2. F. *flavigaster* (Rüpp.) Atlas, t. 25.
3. F. *capensis* (Linn.) Pl. enl. 158. f. 2.
4. F. *septemstriata* (Rüpp.) Faun. Abyss. t. 30. f. 2.
5. F. *erythroptera* (Temm.) Pl. enl. 664. f. 1.—Emberiza capensis var. *Lath.*
6. F. *rufa* Swains. Two Cent. and a Quarter, 315. fig. 63. a.
7. F. *vittata* Swains. Two Cent. and a Quarter, 315. f. 63. c.
8. F. *anthoides* Swains. Two Cent. and a Quarter, 316. f. 63. b.
9. F. *striolata* (Licht.) Swains., Rüpp. Atlas, t. 10. f. a.
10. F. *cæsia* (Cretzschm.) Swains. Rüpp. Atlas, t. 10. f. b.—Emberiza rufibarba *Hempr. et Ehrenb. Ermann,* Verz. Thier. und Pflan. t. 8. f. 1. 2.
11. F. *tahapisi* (A. Smith), Rep. S. Afr. Exp. p. 50.
12. F. *impetuani* (A. Smith), Rep. S. Afr. Exp. p. 50.

Plectrophanes *Meyer.*†

Bill short, conical, somewhat compressed; the culmen rounded and advancing on the forehead, with the lateral margins bent inwards and somewhat angulated at the base; the palate furnished with a small longitudinal bony knob; the nostrils basal, rounded, and partly hidden by the frontal plumes. *Wings* moderate and pointed, with the first quill nearly equalling the second and third, which are the longest. *Tail* moderate, even or slightly emarginated. *Tarsi* nearly equalling the middle toe, and slender. *Toes* moderate, slender; the lateral ones equal, and divided at their base; the hind toe long and strong, armed with a very long and nearly straight claw.

* This genus was formed by Mr. Swainson in 1837. (*Classif. of Birds,* ii. 288.)
† This genus was established by Meyer; it embraces the subdivision *Centrophanes* of Kaup (1829).

EMBERIZINÆ.

These birds are found in the temperate parts of Europe and North America, during the winter season; as the spring advances they retire to the high northern latitudes for the purposes of incubation, but reappear in the milder climates on the return of winter. They frequent the open mountainous districts in flocks, but, should the winters prove severe, they seek the low land, and even the sea-shore. It is on the ground (where they run quickly and with ease) that they search for their food, which consists of various kinds of seeds, alpine fruits, and insects. Their nests are built in the fissures of rocks, or upon hillocks, among moss and grass, and are formed of dry grass, &c.

1. P. *nivalis* (Linn.) Meyer, Pl. enl. 497. f. 1., 511. f. 2.—Emberiza montana et E. mustelina *Gmel.* Wils. Amer. Orn. pl. 23. f. 2.; E. glacialis *Lath.*

2. P. *lapponicus* (Linn.) Selby, Faun. Bor. Amer. pl. 48.—Fringilla calcarata *Pall.* Pr. Bonap. Amer. Orn. pl. 13. f. 2. 3.; Emberiza calcarata *Temm.*? Pl. enl. 654. f. 2. juv.; Type of Centrophanes *Kaup* (1829).

3. P. *pictus* Rich. & Sw. Faun. Bor. Amer. pl. 49.

4. P. *ornatus* Towns. Audub. B. of Amer. pl. 394. f. 1.

August, 1844.

C. Hollmandel's Patent Lithotint

OTOCORIS
penicillata(Gould)

1. CERTHILAUDA africana. 2 MEGALOPHONUS apiatus. 3 OTOCORIS alpestris. 4 ALAUDA arvensis.
5 MELANOCORYPHA calandra. 6 PYRRHULAUDA grisea. 7 MIRAFRA javanica.

The sixth Subfamily,

ALAUDINÆ, or LARKS,

have the Bill short, or more or less lengthened and conical; the Wings with the tertials generally as long as the primaries; the Claws lengthened, more or less curved, and the hind one very long and generally straight.

ALAUDA.*

Bill moderate, conical, with the culmen slightly arched to the tip, and compressed on the sides; the nostrils basal, lateral, oval, and hidden by the frontal plumes. *Wings* lengthened, with or without a short spurious quill, and with the third quill generally the longest. *Tail* moderate and slightly emarginated. *Tarsi* rather longer than the middle toe, and slender. *Toes* moderate and divided; and the hind claw lengthened, and more or less straight.

These birds are peculiar to the Old World, and generally found on the open arable land or plains, though some seem to prefer the cultivated lands. As the winter approaches in the northern parts of Europe, they congregate in flocks, and resort to the southern portions. Some of the species sing while rising into the air, which action is performed either in extended circles, or in a perpendicularly spiral direction, to an immense height. Their flight is undulating; and they walk and run with ease on the ground, where they delight to roll in the dust. Grain and various small seeds form their principal food, but in the summer they procure grasshoppers, gnats, and small worms, &c. The nest is usually placed on the ground, among herbage; and consists of dry grasses and other portions of plants, lined with soft materials.

1. A. *arvensis* Linn. Pl. enl. 363. f. 1. — Alauda cœlipeta *Pall.*; Al. italica *Gmel.*; Al. longipes *Lath.*; Al. Gulgula *Frankl.*; Al. Deva *Sykes?*
2. A. *brachydactyla* Temm. Man. d'Orn. 1. 284. — Alauda Calandrella *Bonelli*; Al. arenaria *Steph.* Vieill. Faun. Franc. t. 74. f. 1., Expéd. de la Morée, Ois. t. 6. f. 1.; Al. Pispoletta *Pall.*? Emberiza Bagheira *Frankl.* Proc. Z. S. 1832. 119.; Al. dukhunensis *Sykes*; Type of Calandrella *Kaup* (1829).
3. A. *Kollyi* Temm. Pl. col. 305. f. 1.
4. A. *gangetica* Blyth, Journ. As. Soc. Beng. 1842. p. 201. — Alauda Gulgula *Blyth.*
5. ? A. *gracilis* Blyth, Journ. As. Soc. Beng. 1842. 201.
6. A. *ruficeps* Rüpp. Faun. Abyss. t. 38. f. 1.
7. A. ? *leucoptera* (Pall.) Zoogr. 11. 518. t. 33. f. 2. — Alauda sibirica *Gmel.*
8. A. *cristata* Linn. Pl. enl. 503. f. 1. — Alauda galerita *Pall.*; Al. undata *Gmel.* Pl. enl. 662.; Al. matutina *Bodd.*; Al. Chendoola *Frankl.*; Al. Gulgula *Sykes*; Type of Galerida *Boie* (1828).
9. A. *malabarica* Scop. Sonn. Voy. Ind. t. 113. f. 1.
10. A. *ferruginea* Von der Mulhe, Beitr. zur Orn. Griechenl.
11. A. *arborea* Linn. Pl. enl. 503. f. 2. — Alauda nemorosa *Gmel.*; Al. cristatella *Lath.*
12. A. *crassirostris* (Vieill.) N. Dict. d'Hist. Nat. 1. 373., Le Vaill. Ois. d'Afr. t. 193. — Alauda magnirostris *Steph.*; Type of Calendula *Swains.* (1837).
13. A. *senegalensis* Gmel. Pl. enl. 504. f. 1.

MELANOCORYPHA *Boie.*†

Bill moderate, with the culmen elevated at the base and arched to the tip, the sides much compressed, and the lateral margins inflexed; the gonys of lower mandible lengthened, and advancing upwards;

* Linnæus established this genus in 1735. It embraces *Galerida* of M. Boie (*Isis*) 1828, which is coequal with *Lullula* and *Calandrella* of M. Kaup (1829), and *Calendula* of Mr. Swainson (1837), which latter was changed to *Erana* by me in 1840; also *Heterops* of Mr. Hodgson (*List of Nepaul Birds*, 1844).

† It was in 1828 (*Isis*) that M. Boie established this genus, which is coequal with *Calandra* and *Saxilauda* of M. Lesson (1837), and *Londra* of Col. Sykes (1838).

nostrils basal, lateral, and entirely concealed by the frontal plumes and short bristles. *Wings* lengthened, without a spurious quill, and the first quill nearly as long as the second and third, which are the longest. *Tail* short. *Tarsi* rather shorter than the middle toe. *Toes* lengthened, strong, and much scutellated, the lateral ones equal; the claws short, but that of the hind toe long, and nearly straight.

The birds that compose this genus are inhabitants of Europe and Asia, especially the northern parts; and also of the northern and southern portions of Africa. They live during summer, in pairs, on arid plains; and in winter they congregate in small flocks, and approach near the habitations of man. Their food consists of grasshoppers, small worms, and seeds. The nest is placed in a tuft of herbs, wherein are laid from four to five eggs.

1. M. *Calandra* (Linn.) Boie, Pl. enl. 363. f. 2.
2. M. *mareotica* (Von der Mulhe), Beitr. zur Orn. Griechenl.
3. M. *bimaculata* (Ménétr.) Cat. p. 37. no. 82.
4. M. *mongolica* (Pall.) Zoogr. 1. 516. t. 33. f. 1. — Alauda sinensis *Waterh.* Proc. Z. S. 1839. 60.
5. M. *tartarica* (Pall.) — Tanagra sibirica *Sparrm.* Mus. Carls. t. 19. — Alauda nigra *Falck*; Al. mutabilis et Al. yeltoniensis *Forst.*; Type of Saxilauda *Less.* 1837.
6. ? M. *nigra* (Steph.) Le Vaill. Ois. d'Afr. t. 191.
7. M. *cinctura* Gould, Voy. Beagle, p. 87.

Pyrrhulauda *A. Smith.**

Bill short, with the culmen arched, the sides much compressed, the tip entire, and the lateral margins sinuated; the nostrils basal, and concealed by the frontal plumes. *Wings* long, with the first quill spurious, and the second rather shorter than the third and fourth, which are nearly equal and longest. *Tail* moderate and slightly emarginated. *Tarsi* moderate, longer than the middle toe, and slender. *Toes* very small, the lateral ones equal, and strongly scutellated above; the claws short, slightly curved, and the hind claw rather long, and nearly straight.

The species of this genus are generally found, in large or small flocks, in Africa and India. "When feeding," says Dr. Smith, "the numerous members of these flocks are widely scattered; but the moment one individual takes to flight from alarm, all the others follow the example, and they move off in a body to another locality. It is not their custom to fly far before they come to a halt; and the instant they reach the ground they scatter in all directions, and run to and fro with great rapidity. They rise into the air, and after soaring for a time descend again like the larks, and like them also they build their nests upon the ground, under the shelter of a tuft of grass or some dwarf shrub. They feed on the seeds of grasses, &c." "The Indian species has the strange habit," says Col. Sykes, "of squatting on the high roads, and almost allowing itself to be ridden over ere it rises."

1. P. *australis* A. Smith, Rep. Exp. App. p. 49., Zool. S. Afr. Birds, pl. 24. — P. melanosoma *Swains.*
2. P. *verticalis* A. Smith, Rep. Exp. App. p. 48., Zool. S. Afr. Birds, pl. 25.
3. P. *leucotis* (Stanley), Rüpp. Salt's Abyss. App. p. 59. — Fringilla otoleucus *Temm.* Pl. col. 269. f. 2, 3., A. Smith Zool. S. Afr. Birds, pl. 26.; Alauda melanocephala *Licht.*
4. P. *grisea* (Scop.) Sonn. Voy. Ind. 11. t. 113. f. 2. — Alauda gingica *Gmel.*; Fringilla cruciger *Temm.* Pl. col. 269. f. 1., Lath. Hist. pl. 97.
5. P. *nigriceps* Gould, Zool. of the Beagle, Birds, p. 87. — Fringilla cruciata *Temm.* ?

Otocoris *Pr. Bonap.*†

Bill short, slender, conical, with the culmen and lateral margins slightly arched; the nostrils basal, lateral, and concealed by projecting plumes. *Wings* lengthened, with the first, second, and third quills,

* Proposed by Dr. A. Smith (1829) in the place of *Megalotis* (which had been previously used) of Mr. Swainson, who established this genus in 1827. (*Zool. Journ.* iii. 343.)

† Proposed by the Prince of Canino (1839) in the place of two names, *Eremophila* of M. Boie (1828), and *Phileremos* of M. Brehm (1831), both of which have been previously used, and which I had changed to *Philammus* (1840), not being aware that the Prince of Canino had previously given the above name.

equal and longest. *Tail* lengthened and equal. *Tarsi* short, but longer than the middle toe. *Toes* short and strongly scutellated; and the claws lengthened and nearly straight.

These migratory birds inhabit the most northern parts of Europe and America, and some are found in the south-east of Europe, and south-western parts of Asia, frequenting the sandy plains and humid places, in loose scattered flocks. Their food consists chiefly of various kinds of seeds mixed with gravel; and, in some seasons, of the eggs and larvæ of insects. The nest is formed on the ground, of dry grasses, and lined within with feathers. The female deposits six eggs.

1. O. *alpestris* (Linn.) Pl. enl. 650. f. 2., Wils. American Ornithol. pl. 5. f. 4. — Alauda flava *Gmel.*; Alauda nivalis *Pall.*; Alauda cornuta *Swains.* Phil. Mag. 1827. p. 434.; Alauda chrysolaëma *Wagl.*

2. O. *penicillata* (Gould), Proc. Z. S. 1837. p. 126. — Otocoris scriba (Gould), Pr. Bonap. List; Alauda alpestris *Gmel. jun.* Itin. 1. 62. t. xii.

3. O. *bilopha* (Temm.) Pl. col. 241. f. 1. — Alauda bicornis *Hempr.*

Megalophonus.*

Bill moderate, slender, compressed, with the culmen somewhat curved to the tip; the nostrils basal, lateral, and covered only by a membrane. *Wings* very short, with the first quill short, and the second nearly as long as the third, which is the longest. *Tail* moderate. *Tarsi* longer than the middle toe and slender. *Toes* moderate, the lateral ones equal; and the hind claw short and somewhat curved.

These birds are peculiar to South Africa, where they prefer arid plains or sandy places, which are sparingly covered with small shrubs; they are often observed perched on the low branches of shrubs, and on the long and rank grass, among which they run and hide themselves. One of the species is remarkable for making a noise by the clapping of the wings, when rising from the ground, so as to be heard at some distance; it rarely mounts above fifteen or twenty feet, and while rising utters a short note, and this chiefly at daybreak and sunset. Their food consists of seeds and small insects. It is in a hollow on the ground that the nest is made, wherein are laid from four to six eggs.

1. M. *apiatus* (Vieill.) N. Dict. d'Hist. Nat. 1. 342., Le Vaill. Ois. d'Afr. t. 194. — Alauda clamosa *Steph.*

2. M. *albescens* (Lafr.) Rev. Zool. 1839. 259. — Alauda codea *A. Smith*, Ill. Zool. S. Afr. pl. 87. f. 1.

3. M. *guttatus* (Lafr.) Rev. Zool. 1839. 259.

4. M. *lagepa* (A. Smith), Ill. Zool. S. Afr. pl. 87. f. 2.

5. M. *rufipileus* (Vieill.) N. Dict. d'Hist. Nat. 1. 343., Le Vaill. Ois. d'Afr. t. 198. — Alauda ruficapilla *Steph.*

6. M. *africanus* (A. Smith), Rep. S. Afr. Exped. p. 47., Ill. Zool. S. Afr. pl. 88. f. 1.

7. M. *africanoïdes* (A. Smith), Rep. S. Afr. Exped. p. 47., Ill. Zool. S. Afr. pl. 88. f. 2.

8. M. *sabota* (A. Smith), Rep. S. Afr. Exped. p. 47., Ill. Zool. S. Afr. pl. 89. f. 1.

9. M. *cheniana* (A. Smith), Rep. S. Afr. Exped. p. 46., Ill. Zool. S. Afr. pl. 89. f. 2.

10. M. *pyrrhonotus* (Vieill.) N. Dict. d'Hist. Nat. 1. 361., Le Vaill. Ois. d'Afr. t. 197. — Alauda erythronota *Steph.*

11. M. *cinereus* (Lath.) Le Vaill. Ois. d'Afr. t. 199.?

Mirafra *Horsf.*†

Bill short, much elevated at the base, and the culmen arched to the tip, with the sides compressed, and the lateral margins arched; the nostrils basal, lateral, and covered only with a membrane. *Wings* moderate, with the first quill nearly half the length of the second, and the third nearly as long as the fourth and fifth, which are equal and longest. *Tail* short and slightly emarginated. *Tarsi* nearly

* In 1841, I proposed this name in the place of Mr. Swainson's genus *Brachonyx* (*Zool. Journ.* 1827, p. 345.), and of that which I had myself first altered it to, viz. *Corypha* (1840), because they had been previously employed.

† Established by Dr. Horsfield in (1820) *Linnean Transactions*, xiii. p. 159 It is *Plocealauda* of Mr. Hodgson (*List of Nepaul Birds*, 1844).

equalling the middle toe. *Toes* moderate, the lateral ones equal; the anterior claws short and curved, and the hind one lengthened and straight.

These birds are mostly found in India and its islands, and the northern parts of Africa. "One of the species frequents," says Mr. Jerdon, "the bushy and stony hills, and low jungly plains. It is found single or in pairs, is a wary bird when roused, flying a short distance, and seating itself behind a bush on the ground, or perching on the back part of a bush, which it does much more frequently. Others seek the open plains, preferring the barest spots, ploughed land, stubble fields, and beds of nullahs. It sometimes, though rarely, perches on bushes. It frequently ascends suddenly in the air by a few interrupted strokes of its wings, and uttering at the same time a pleasant loud whistling-like note, sounding something like 'too whee'; it then descends with a sudden fall, changing its note to a low lark-like warbling; when close to the ground, it again repeats this, and so on for several times." They feed principally on various kinds of seeds, and occasionally on insects.

1. M. *javanica* Horsf. Linn. Trans. xiii. 159. — Alauda Mirafra *Temm.* Pl. col. 305.
2. M. *assamica* M'Clell. Proc. Z. S. 1839. 162.
3. M. *flavicollis* M'Clell. Proc. Z. S. 1839. 163.
4. M. *phœnicura* Frankl. Proc. Z. S. 1831. 119.
5. M. ? *cantans* Jerd.
6. M. *deserti* (Licht.) Cat. Dupl. Berl. Mus. No. 286. — Alauda isabellina *Temm.* Pl. col. 244. f. 2.

Certhilauda *Swains.**

Bill lengthened, slender, both mandibles equally curved; the nostrils basal, lateral, rounded, and covered by a membrane. *Wings* long, with the first quill short, and the third, fourth, and fifth nearly equal and longest. *Tail* moderate and even. *Tarsi* much longer than the middle toe, slender. *Toes* moderate, the lateral ones equal; with the hind claw more or less lengthened, and straight.

It is in the deserts and the sandy places of South and North Africa, and occasionally in Europe, that these birds are observed perched on the top of a hillock or low shrub, when they utter a few whistling notes. Small insects and seeds form their food. The nest is usually placed on the ground, at the foot of a bush, in a hollow scratched out by the feet, on a bed of dry herbs, lined with feathers plucked from the bird itself. The female deposits therein from three to five eggs.

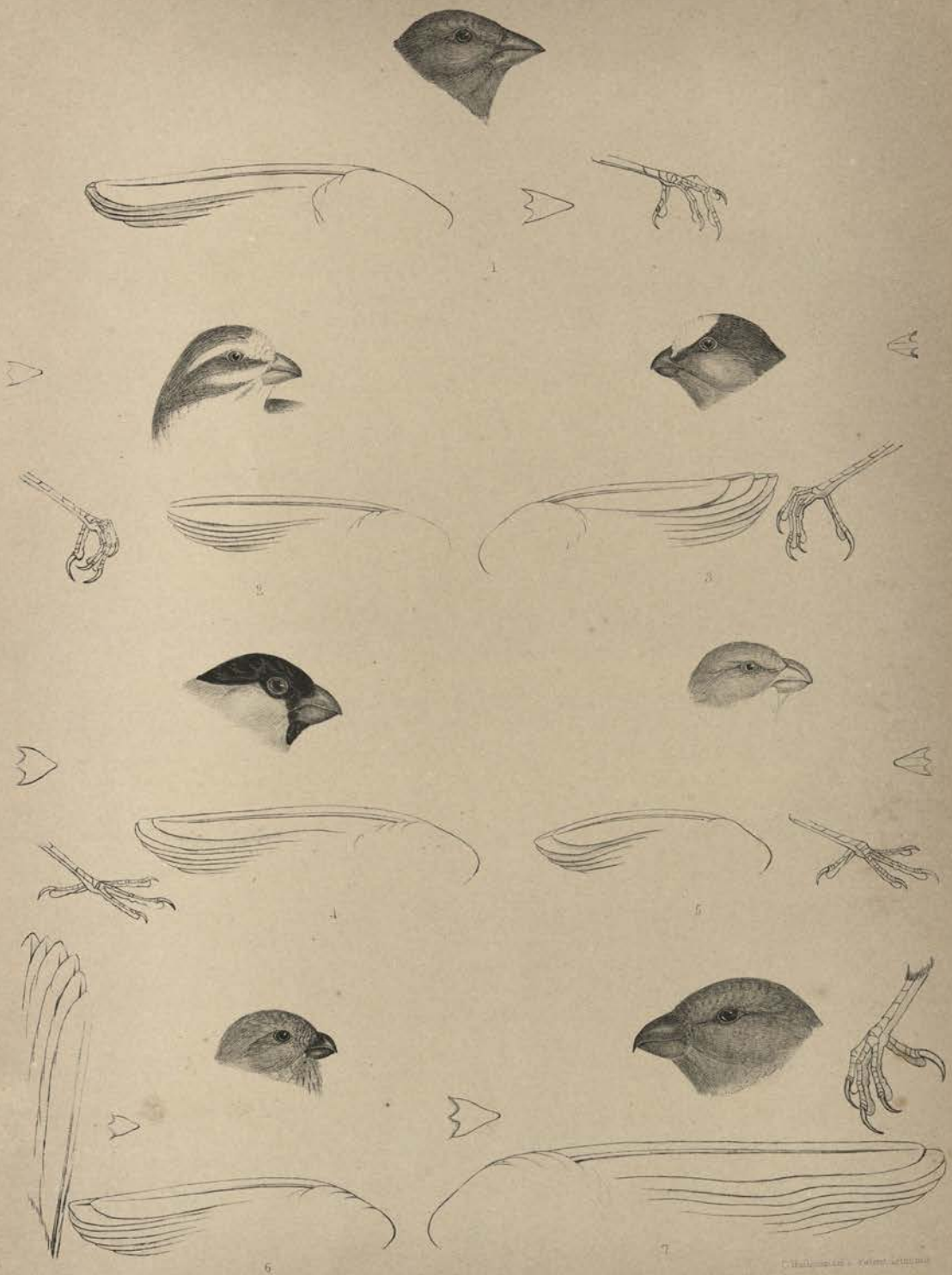
1. C. *africana* (Gmel.) Le Vaill. Ois. d'Afr. t. 192., A. Smith, Ill. S. Afr. Zool. pl. 90. f. 1. — Certhilauda longirostris *Swains.*
2. C. *semitorquata* A. Smith, Rep. S. Afr. Exped. p. 47.
3. C. *subcoronata* A. Smith, Ill. S. Afr. Zool. pl. 90. f. 2.
4. C. *rufopalliata* Lafr. Mag. de Zool. 1836. Ois. t. 59.
5. C. *albofasciata* Lafr. Mag. de Zool. 1836. Ois. t. 58.
6. C. *nivosa* Swains. B. of W. Afr. 1. 213.
7. C. *Dupontii* Vieill. Faun. franc. t. 36. f. 2.
8. C. *desertorum* (Stanl.) Pr. Bonap., Salt's Trav. App. p. 60. — Alauda bifasciata *Licht.* Rüpp. Atlas, t. 5.

* This genus was originally established by Temminck, under the appellation of *Corydalis*; but it becomes necessary to use the above in its place, as the latter has been previously employed. Mr. Swainson proposed his name in the *Zool. Journ.* 1827, p. 344. In 1840, Count Keyserling and Prof. Blasius used *Alaemon*, which is coequal.

MUSEUM TRING

CATAMBLYRHYNCHUS
diadema (Lafr.)

C.Hullmandel's Patent Lithotint



1 CARPODACUS purpureus 2 CRITHAGRA sulphurata 3 CATAMBLYRHYNCHUS diadema 4 PYRRHULA rubicilla
5 SPERMOPHILA cinereola 6 URAGUS sibiricus 7 STROBILOPHAGA enucleator.

The seventh Subfamily,

PYRRHULINÆ, or BULLFINCHES,

have the Bill very short, strong, more or less compressed, and entire, with the culmen arched and convex; the Wings moderate, and somewhat rounded; the Tail moderate and slightly emarginated; the Tarsi short and scutellated; and the Toes moderate, the lateral ones generally unequal.

CARPODACUS *Kaup.**

Bill conical, short, broad at the base, with the culmen slightly arched to the tip; the gonys lengthened and suddenly advancing upwards; the lateral margins sinuated and slightly curved; the nostrils basal, lateral, and concealed by the frontal plumes. *Wings* long and pointed, with the first quill rather shorter than the second and third, which are the longest. *Tail* moderate and slightly forked. *Tarsi* shorter than the middle toe, and robust. *Toes* moderate, the lateral ones unequal; and the claws short and curved.

They are more especially found in the most northern parts of Europe, America, Africa, and Asia; frequenting the sides of rivers, and sometimes the cultivated fields, where they seek the seeds of various plants. The nest is formed of hay, between the branches of the trees of the forests; and the female lays from five to six eggs.

1. C. *erythrinus* (Pall.) Pall. Zoogr. ii. 8. t. 36., Kittl. Kupf. der Vög. t. 32. f. 1. — Erythrothorax rubrifrons *Brehm*; Loxia cardinalis *Beseke*; Fringilla flammea *Retz*; Loxia obscura *Gmel.*
2. C. *phœnicopterus* (Gould), Gould's B. of Eur. pl.
3. C. *roseus* (Pall.) Pall. Zoogr. ii. 23. t. 42.
4. C. *purpureus* (Gmel.) Catesby's Carol. 1. t. 41., Wils. Amer. Orn. pl. 7. f. 4. & pl. 42. f. 3.
5. C. *frontalis* (Say), Long's Exped. Rocky Mount. ii. 40., Pr. Bonap. Am. Orn. t. 6. f. 1, 2. — Fringilla hæmorrhoa *Licht.*; Pyrrhula cruentata *Less.* Rev. Zool. 1839. 101.
6. C. *Payraudæi* (Audouin), Histoire de l'Egypte, Zoolog. 1. 286. Ois. t. 5. f. 8. — Pyrrhula githaginea *Licht.* Pl. col. 400. f. 1. & 2.
7. C. *rhodopepla* (Vigors), Proc. Z. S. 1831. 23., Gould's Cent. of Birds, pl. 31. f. 1.
8. C. *rhodochroa* (Vigors), Proc. Z. S. 1831. 23., Gould's Cent. of Birds, pl. 31. f. 2.
9. C. *synoica* (Temm.) Pl. col. 375.
10. C. *obsoleta* (Licht.) Everm. Reise, p. 132.

CRITHAGRA *Swains.*†

Bill short, more elevated than broad, with the culmen and lateral margins curved to the tip, the sides compressed, and the gonys lengthened and advancing upwards; the nostrils basal, lateral, and hidden by the frontal plumes. *Wings* moderate, with the first quill rather shorter than the second; the third and fourth quills nearly equal and longest. *Tail* moderate and slightly forked. *Tarsi* shorter than the

* Established (1829) by M. Kaup (*Naturl. Syst.* p. 161.), and adopted in the place of *Erythrina* of M. Brehm (1828), which word he changed to *Erythrothorax* in 1831, as it had long been employed in Botany. The Prince of Canino, in 1830, had proposed *Erythrospiza*; and Mr. Swainson, in 1837, *Hæmorrhous.*

† Established in 1827 (*Zool. Journ.* iii. p. 24.) by Mr. Swainson.

middle toe, and strongly scaled. *Toes* moderate, the lateral ones equal, and all much scutellated above; the claws long, slender, acute, and slightly curved; the hind claw as long as the toe.

The species of this genus are peculiar to the continent of Africa; where they are found in the neighbourhood of rivers. Their food consists of various seeds.

1. C. *sulphurata* (Linn.) Swains. Jard. and Selby's Ill. Orn. t. 109. f. 1. — C. albigularis *A. Smith*, S. African Journ. 1. 48.?
2. C. *Selbii* A. Smith, Rep. S. Afr. Exp. App. p. 50., Jard. and Selby's Ill. Orn. t. 109. f. 2. — C. cinerea *Swains.*
3. C. *ruficauda* Swains. Two Cent. and a Quarter, p. 317.
4. C. *canicollis* Swains. Two Cent. and a Quarter, p. 317.
5. C. *strigilata* Swains. Two Cent. and a Quarter, p. 317.
6. C. *bistrigata* Swains. Two Cent. and a Quarter, p. 318.
7. C. *canaria* Swains. Two Cent. and a Quarter, p. 318., Webb et Berth. Voy. Canar. Ois. t. 2.
8. C. *flava* Swains. Two Cent. and a Quarter, p. 318.
9. C. ? *hypoxantha* (Sparr.) Mus. Carls. t. 71.
10. C. *flaviventris* (Gmel.) Swains. Briss. Orn. iii. 227. t. 11. f. 2.
11. C. *chrysopyga* Swains. B. of W. Afr. pl. 17.

Catamblyrhynchus *Lafr.**

Bill very short, the culmen elevated, broad, and curved from the base to the tip, where it is rather hooked and entire, the sides much compressed and grooved; the under mandible very short, thick, and with the gonys gradually ascending; the nostrils basal, lateral, rounded, and partly concealed by the frontal feathers. *Wings* short and rounded, with the four first quills (especially the two first) graduated, and the fourth and fifth the longest. *Tail* long and wedge-shaped. *Tarsi* much longer than the middle toe, and slightly scutellated. *Toes* long and slender, with the lateral ones equal, and the hind toe as long as the middle one.

The type is an inhabitant of Santa Fe de Bogota, but the habits of it are at present unknown.

C. *diadema* Lafr. Rev. Zool. 1842, Mag. de Zool. 1843. t. 34.

Spermophila *Swains.*†

Bill much higher than broad, with the culmen arched to the tip, and the sides compressed and somewhat grooved; the lateral margins more or less straight, and the lower mandible at the base sometimes broader than the upper; the nostrils basal, lateral, and rounded. *Wings* short and rounded, with the first quill rather shorter than the second; the second, third, and fourth, nearly equal and longest. *Tail* moderate and rounded. *Tarsi* shorter than the middle toe, and scutellated. *Toes* moderate, with the lateral ones equal; the claws long and slightly curved.

These birds are peculiar to the tropical parts of South America and the West Indies; where some of the species prefer the bushes of the cultivated fields, and are seen perched on the ends of the small branches; others frequent the shrubs in the neighbourhood of marshy places. Their food consists of small seeds and fruits. Their nest is composed of small roots and fibres of plants.

* Established in the *Révue Zoologique*, 1842, p. 301., by Baron De Lafresnaye; it is coequal with the Prince of Canino's genus *Bustamentia* (1844).

† Established by Mr. Swainson in 1827 (*Zool. Journ.* iii. p. 34.), and *Sporophila* (1844) of M. Cabanis is coequal. It probably embraces *Callirhynchus* (1842) of M. Lesson.

1. S. *falcirostris* (Temm.) Swains. Temm. Pl. col. 11. f. 2.
2. S. *bicolor* (D'Orb. & Lafr.) Syn. Avium p. 86., Voy. dans l'Amér. Mér. Ois. t. 50. f. 1.
3. S. *cinereola* (Temm.) Swains. Temm. Pl. col. 11. f. 1. — Pyrrhula rubrirostris *Vieill.* ?
4. S. *albogularis* (Spix), Swains. Spix Av. Bras. t. 60. f. 1, 2.
5. S. *cinerea* (D'Orb. & Lafr.) Syn. Avium p. 87.
6. S. *pyrrhomelas* (Pr. Max.) — Loxia brevirostris *Spix*, Av. Bras. t. 59. f. 1, 2.; Sperm. rubiginosa *Swains.*; Loxia fraterculus, *Less.*
7. S. *plebeia* (Spix), Spix Av. Bras. t. 59. f. 3.
8. S. *ignobilis* (Spix), Spix Av. Bras. t. 60. f. 3.
9. S. *leucopterygia* (Spix), Spix Av. Bras. t. 58. f. 3.
10. S. *nasuta* (Spix), Spix Av. Bras. t. 58. f. 1, 2.
11. S. *mysia* (Vieill.) Vieill. Ois. chant. t. 46.
12. S. *grisea* (Gmel.) Pl. enl. 393. f. 1. — Fringilla cana *Gmel.* ?
13. S. *flabellum* (Bodd.) Pl. enl. 380. — Loxia flabellifera *Gmel.*
14. S. *nigra* (Linn.) Gal. des Ois. t. 57., Voy. l'Ile de Cuba Ois. t. 17. — Pyrrhula crenirostris *Vieill.* Ois. chant. t. 77.
15. S. *glauco-cærulea* (D'Orb. & Lafr.) Voy. dans l'Amér. Mér. Ois. t. 50. f. 2.
16. S. *minuta* (Linn.).
17. S. *chrysocephala* (Vieill.) Ency. Méth. p. 1012., Azara No. 122.
18. S. *pectoralis* (Lath.) — Loxia americana *Gmel.*
19. S. *lineola* (Linn.) Briss. Orn. iii. 319. t. 17. f. 1., Pl. enl. 319. f. 1. var. — Pyrrhula crispa *Vieill.* Ois. chant. t. 47.
20. S. *griseoventris* (Lafr.) Rev. Zool. 1841. 242.
21. S. *nigro-rufa* (D'Orb. & Lafr.) Syn. Avium, p. 87.
22. S. *Abeillei* (Less.) Rev. Zool. 1839. 40.
23. S. *cinnamomea* (Lafr.) Rev. Zool. 1839. 99.
24. S. *collaris* (Vigors), Zool. Journ. iii. p. 441.
25. S. *haitii* (Record), Rev. Zool. 1838. p. 167.
26. S. *olivacea* (Vieill.) Ency. Méth. p. 1027. — Pyrrhula viridis *Less.*
27. S. *longicauda* (Vieill.) Nouv. Dict. Hist. Nat. v. 296.
28. S. *nigricollis* (Vieill.) Ency. Méth. p. 1027.
29. S. *cærulescens* (Vieill.) Ency. Méth. p. 1023.
30. S. *superciliosa* (Vieill.) Ency. Méth. p. 1026.
31. S. *rufescens* (Vieill.) Nouv. Dict. Hist. Nat. iv. 298.
32. S. *pyrrhomelas* (Vieill.) Ency. Méth. p. 1027.
33. S. *melanocephala* (Vieill.) Nouv. Dict. Hist. Nat. xiii. 542., Azara No. 124.
34. S. *capistrata* (Vigors), Zool. Journ. iii. p. 273.
35. S. *mutans* (Vieill.) Nouv. Dict. Hist. Nat. xiii. p. 525., Azara No. 126.
36. S. *fusciventris* (Bodd.) Pl. enl. 319. f. 2. — Loxia bicolor *Gmel.*
37. S. *nigroaurantia* (Bodd.) Pl. enl. 204. f. 1. — Loxia aurantia *Gmel.*
38. S. *Daubentoni* Pl. enl. 204. f. 2.
39. S. *inornata* (Vigors), Zool. of Beechey's Voy. p. 20.
40. S. *nigrogularis* Gould, Voy. Beagle, Birds, p. 88.
41. S. *hypoleuca* (Licht.) Cat. Dupl. Berl. Mus. No. 262., Azara No. 123.
42. S. *leucoptera* (Vieill.) Nouv. Dict. Hist. Nat. xiii. p. 521., Azara No. 127.
43. S. *alaudina* (D'Orb. & Lafr.) Syn. Avium p. 83.
44. S. ? *collaria* (Linn.) Pl. enl. 393. f. 3. — Loxia cucullata *Bodd.*
45. S. ? *collaris* (Bodd.) Pl. enl. 659. f. 2. — Loxia collaria var. *Lath.*
46. S. ? *peruviana* (Less.) Rev. Zool. 1842. 209. — Type of Callirhynchus *Less.* (1842).
47. S. ? *noctis* (Linn.) Pl. enl. 201. f. 1.
48. S. ? *angolensis* (Linn.) Edwards' Birds, pl. 352. f. 2.
49. S. ? *violacea* (Linn.) Catesby's Carol. pl. 40. — Pyrrhula nigerrima *Vieill.*
50. S. ? *martinicensis* (Lath.).
51. S. ? *rufo-barbata* (Jacq.) Jacq. Beitr. t. 11.
52. S. *luctuosa* (Licht.) Tschudi, Fauna Peruv. 1844. p. 31.
53. S. *telasco* (Less.) Voy. de la Coqu. Ois. t. 15. f. 2.
54. S. *crassirostris* (Gmel.)
55. S. *bouvronides* (Less.) Tr. d'Orn. p. 450. — Pyrrhula pectoralis *Vieill.*
56. S. ? *torquata* (Less.) Tr. d'Orn. p. 450.
57. S. ? *albocollaris* (Less.) Tr. d'Orn. p. 450.
58. S. *gutturalis* (Licht.) Cat. Dupl. Mus. Berl. No. 263.

PYRRHULA *Mœhr.**

Bill short, broader than high at the base, with the culmen arched from the base, where it is rather depressed; the sides slightly swollen; the gonys of the under mandible lengthened and suddenly advancing upwards; the nostrils basal, rounded, and hidden by the frontal plumes. *Wings* moderate; with the second, third, and fourth quills equal and longest. *Tail* moderate, and even or slightly emarginated. *Tarsi* the length of the middle toe, strongly scaled. *Toes* moderate, with the lateral ones unequal, and all strongly scaled above; the claws moderate, and much compressed.

They are inhabitants of Europe and the northern parts of India; where they are usually found in the mountains, woods, or jungles, and are generally seen in pairs during the spring, and afterwards congregate in small parties of few

* Established by Mœhring (*Syst. Avium*) in 1752.

individuals for the remainder of the year. Their food varies with the season: during the winter and spring it consists principally of buds, occasioning much injury to the fruit and other trees; while during the summer and autumn they seem to prefer the seeds of various plants. The nest, which is carelessly put together and shallow, is formed of small sticks, lined interiorly with a few fibres of roots, on the forked branch of a low tree. The female lays four or five eggs.

1. P. *rubicilla* Pall. Pl. enl. 145. — Loxia Pyrrhula *Linn.*; Emberiza coccinea *Sander.*; Pyr. europæa *Vieill.*; Pyr. vulgaris *Temm.*
2. P. *erythrocephala* Vigors, Proc. Z. S. 1831. 174., Gould's Cent. of Birds, pl.
3. P. *nipalensis* Hodgs. As. Res. xix. 155.
4. P. ? *epauletta* Hodgs. As. Res. xix. 155

Uragus *Keys. & Blas.**

Has the generic characters of Pyrrhula, except that the *Wings* have the first three quills slightly graduated, and the third and fourth equal and longest. *Tail* much lengthened, and rounded at the end.

These birds reside in the most northern parts of Europe during the summer, and migrate in small flocks to the southern provinces of Russia, &c., on the approach of winter. It is in bushy shrubs, in the neighbourhood of streams and torrents, that this bird is usually found; and seeds, especially those of the *Artemisiæ*, seem to constitute its principal food.

U. *sibiricus* (Pall.) — Pyrrhula caudata *Pall.* Zoogr. t. 37.; Pyrr. longicauda *Temm.*

Strobilophaga *Vieill.*†

Bill short, with the base as broad as high, the culmen much arched, and the sides somewhat compressed; the gonys lengthened and advancing upwards; and the nostrils basal, and hidden by the frontal plumes. *Wings* moderate, with the second and third quills longest. *Tail* rather long, broad, and somewhat forked. *Tarsi* as long as the middle toe, and strongly scutellated; the lateral toes unequal, and the inner the shortest; the claws slender, acute, and slightly curved.

These birds inhabit during the summer the northern parts of Europe, Asia, and America, where they reside mostly in the pine forests, &c., and migrate more southerly on the approach of winter. The seeds and berries of various alpine trees and plants form their food. Their nest is composed of dry sticks and small twigs, lined with feathers, and is generally placed in trees. The female deposits four eggs.

1. S. *enucleator* (Linn.) Gould's B. of Eur. pl., Wils. Amer. Orn. pl. 5. f. 2. — Loxia psittacea *Pall.*; Loxia Flamingo *Sparr.* Mus. Carls. t. 17. var.
2. S. *caucasica* (Pall.) — Loxia rubicilla *Güldenst.* Nov. Com. Petrop. xix. 463. t. 12.
3. S. *sipahi* Hodgs. As. Res. xix. 151.
4. S. *subhimachalus* Hodgs. As. Res. xix. 151.

* Established by Count Keyserling and Prof. Blasius, in their *Wirbelthiere Europa's*, 1840, p. 40.

† Established by Vieillot (*Analyse*, p. 29.) in 1816, in the place of *Pinicola*, which he had proposed in 1807. In 1817, Cuvier used *Corythus* for this division.

C.Hullmandel's Patent Lithotint

PARADOXORNIS
1 rafflesii Blyth. 2 guttaris Horsf.

The eighth Subfamily,

LOXIANÆ, or CROSSBILLS,

have the Bill more or less long, broad, but compressed towards the tips, which sometimes cross each other, and curved, or the upper overlapping that of the lower mandible; the Wings more or less lengthened, pointed, and sometimes rounded; the Tail moderate and emarginated, or graduated; the Tarsi short, with the Toes moderate.

LOXIA *Linn.**

Bill moderate, broad at the base, with the culmen much curved, and the sides much compressed to the tip, which is prolonged, very acute, entire, and both mandibles cross each other, with the lateral margins bent inwards; the gonys long, and much curved upwards; the nostrils basal, lateral, rounded, and mostly hidden by the bristly frontal plumes. *Wings* moderate, with the first three quills nearly equal and longest. *Tail* short and emarginated. *Tarsi* short, the length of the middle toe, without the claw, robust, feathered below the knee, and covered with scales. *Toes* short, the lateral ones equal, the outer united at its base, and the hind toe very long; the claws long, especially that of the hind toe, acute and curved.

These birds are found in the northern parts of Europe, America, and Asia, migrating to the higher latitudes on the return of each succeeding summer. They frequent in flocks the great forests of pines and fir trees, the seeds of which form their principal subsistence. The seeds are detached by means of the strong lever they possess in the remarkable formation of their bill, which is admirably adapted for wrenching asunder the scales of the cones. It also enables them to slit open apples and pears for the purpose of obtaining the pips, and they thus occasionally commit great havock in orchards. During the height of winter they are said to make their nests, which are usually placed in the fork of a branch, and consist of moss, lichen, &c., lined with feathers. The eggs are four or five in number.

1. L. *pityopsittacus* Bechst. Orn. Tasch. i. 106. — Crucirostra pinetorum *Meyer*, Gould's B. of Eur. pl. 201.; C. subpityopsittacus *Brehm*.

2. L. *curvirostra* Linn. Pl. enl. 218., Gould's B. of Eur. pl. 202. — Loxia crucirostra *Pall.*

3. L. *leucoptera* Gmel. Gould's B. of Eur. pl. 203. — Loxia falcirostra *Lath.* Audub. B. of Amer. pl. 364., Dixon's Voy. pl. 19., Wils. Amer. Orn. pl. 15. f. 3. pl. 31. f. 3.

4. L. *americana* (Wils.) Am. Orn. pl. 31. f. 1, 2., Audub. B. of Amer. pl. 197. — Loxia fusca *Vieill.* ?

5. L. *himalayana* Hodgs. Proc. Z. S. 1845. p. ., Ann. Nat. Hist. 1845. p. 206.

6. L. *tænioptera* Glog. — Crucirostra bifasciata *Glog.* Ornis, 1827. p. 77.

* Established by Linnæus in 1735 (*Systema Naturæ*). In 1777 Scopoli used *Curvirostra*, and between 1799 and 1800 Cuvier proposed *Crucirostra* for the same birds.

PSITTIROSTRA *Temm.**

Bill short, broad at the base, with the culmen arched to the tip, which is much curved over that of the lower mandible, and acute; the sides compressed, and the gonys lengthened, much curved upwards and swollen: the nostrils basal, partly closed by a membrane and covered with the plumes. *Wings* moderate, with the first and second quills rather shorter than the third, which is the longest. *Tail* moderate, and slightly emarginated. *Tarsi* longer than the middle toe, and covered by a single long scale. *Toes* moderate, and the lateral ones unequal, the outer the longest, and slightly united at its base; the hind toe long, strong, and broadly padded beneath; the claws short, strong, and much curved.

The type of this genus is said to be very common in the Sandwich Islands.

P. *psittacea* (Lath.) Swains. Lath. Gen. Syn. pl. 42.— Psittirostra icterocephala *Temm.* Pl. col. 457.; P. sandwichensis *Steph.*

PARADOXORNIS *Gould.*†

Bill short, as high as long, with the culmen much arched; the sides much compressed, and the lateral margins festooned; the nostrils basal, lateral, small, rounded, and hidden by the frontal plumes. *Wings* short and rounded, with the fourth to the sixth quills the longest. *Tail* lengthened and much graduated. *Tarsi* robust, rather longer than the middle toe, and covered in front with lengthened scales. *Toes* moderate, the lateral ones unequal, the inner the shortest, and the hind toe long, strong, and broadly padded; the claws moderate, acute, and slightly curved.

The species inhabit the mountains of the northern portion of the continent of India.

1. P. *flavirostris* Gould, Proc. Z. S. 1836. p. 17., Gould's Icones Avium, pl.—Bathyrhynchus brevirostris *Mc Clell.*, Med. Journ. Calc. 1838. p.

2. P. *ruficeps* Bl. Journ. As. Soc. Beng. 1842. 177. 1843. p. 947. pl.

3. P. *gularis* Horsf. MSS.

* M. Temminck established this name in 1820 (*Analyse du Syst. Gen. d'Ornith.* p. lxx.). Two or three years afterwards, Nitzsch proposed *Psittacopis* as a more classical word.

† Mr. Gould established this genus in 1836. In 1838 *Bathyrhynchus* was proposed by Mr. Mc Clelland for the same type.

December, 1845.

C. Hollandais ad. Pateat Lithogr.

PHYTOTOMA
rara. Mol.

The ninth Subfamily,

PHYTOTOMINÆ, or PLANT-CUTTERS,

have the Bill short, conical, with the lateral margins serrated.

PHYTOTOMA *Mol.**

Bill short, strong, broad at the base, and the sides gradually compressed towards the tip, with the culmen elevated and rather arched, and the lateral margins straight and finely serrated; the nostrils basal, small, and ovoid. *Wings* moderate, with the first two quills graduated, and the third, fourth, and fifth equal and longest. *Tail* moderate and even. *Tarsi* strong, shorter than the middle toe, and covered with transverse scales. *Toes* long and slender, with the lateral ones unequal; the hind toe long; and all armed with long curved claws.

The birds of this genus are peculiar to the temperate regions of South America, where they are found in the woody parts of the dry and arid hills and plains, but frequently visiting the environs of inhabited and cultivated places. They live in pairs and in small troops, searching gardens and orchards, and devastating plantations by cutting off buds and fruits. Their flight is short and low, but is sometimes prolonged; and their habits resemble those of the Tanagers of the genus *Saltator*, with which they are frequently seen mingled. Their note is excessively disagreeable, approaching the noise made by the teeth of a saw rubbed together. They feed on grains, buds, and insects.

1. Ph. *rara* Mol. Hist. Nat. du Chile, p. 235. — Phytotoma silens *Kittl.* Vögel von Chili, tab. 1.; Ph. Bloxami *Children*, Griff. An. Kingd. ii. p. 319. pl., Jard. & Selby's Ill. Ornith. pl. 4.; Ph. Molina *Less.* Mag. de Zool. 1844. Ois. t. 5.

2. Ph. *angustirostris* D'Orb. & Lafr. Syn. Av. p. 37., Voy. dans l'Amér. Mérid. Ois. t. 29. f. 2.

3. Ph. *rutila* Vieill. N. Dict. Hist. Nat. xxvi. 26., Azara No. 91., D'Orb. Voy. dans l'Amér. Mérid. Ois. t. 29. f. 1.

* Established by Molina (*Essai sur l'Hist. Nat. du Chili*) in 1789.

February, 1845.

Hullmandel & Walton Lithographers

COLIUS
macrourus Linn.

LOXINÆ.

PHYTOTOMINÆ.

COLINÆ.

1. PARADOXORNIS flavirostris. 2. PSITTIROSTRA psittacea. 3. LOXIA pityopsittacus.
4. PHYTOTOMA angustirostris. 5. COLIUS striatus.

The fifth Family,

COLIDÆ, or COLIES,

have the Bill moderate, with the culmen elevated at the base, and the sides compressed to the tip, which is acute; the Nostrils placed in the middle of a large membranous groove, with the opening small and exposed: the Wings short: the Tail much lengthened and graduated: the Tarsi robust, and the Toes lengthened, the outer as long as the inner, the hind toe moderate, united at the base of the inner toe, and directed forwards.

The only Subfamily,

COLINÆ, or COLIES,

has the characters given above.

COLIUS *Briss.**

Bill moderate, broad, and elevated at the base, with the culmen arched, and the sides compressed to the tip, which is acute; the lateral margins sinuated; the gonys short and slightly ascending; the nostrils placed in a short, broad, membranous groove, with the opening small and exposed. *Wings* moderate, with the first quill long, the second to the fourth nearly equal and longest. *Tail* much lengthened and graduated, with the feathers narrowed throughout. *Tarsi* as long as the middle toe, robust, and covered with broad scales. *Toes* rather long, the lateral toes equal, the hind moderate, united at the base of the inner toe, and directed forwards; the claws long, curved, and very acute.

The birds of this genus are peculiar to the continent of Africa, where they are usually observed in parties on the trees, among the branches of which they are seen quickly hopping from one to another in search of the fruits and freshly formed buds, on which they subsist. Their flight consists of little more than flitting from one tree to another; and they have a peculiar habit of suspending themselves by one foot attached to the branch, with the head hanging downwards. They are rarely observed on the ground, as the formation of their foot does not admit of their walking with ease. They form their nests in society, closely packed together on the same tree or bush, and composed of flexible twigs lined with feathers, the female depositing from four to six eggs.

* Established by Brisson in 1760 (*Ornithologie*, iii. p. 304.).

1. C. *capensis* Gmel. Pl. enl. 282. *f.* 1. — Loxia colius *Linn.*

2. C. *erythropus* Gmel. Lath. Gen. Syn. pl. 41. — Colius leuconotus *Lath.*; C. erythropygius *Vieill.* Levaill. Ois. d'Afr. t. 257.

3. C. *macrourus* (Linn.) Pl. enl. 282. f. 2. — Colius senegalensis *Gmel.* Vieill. Gal. des Ois. t. 51.

4. C. *erythromelon* Vieill. N. Dict. d'Hist. Nat. vii. p. 378. — Colius carunculatus *Steph.* Levaill. Ois. d'Afr. t. 258.; C. quiriwa *Less.*

5. C. *striatus* Gmel. Levaill. Ois. d'Afr. t. 256. — Colius panayensis *Gmel.*; Tanagra macroura *Scop.* Sonn. Voy. t. 74.

6. C. *nigricollis* Vieill. N. Dict. d'Hist. Nat. vii. p. 378., Levaill. Ois. d'Afr. t. 259. — Colius atrogularis *Steph.*; C. gularis *Cuv.*

7. C. *leucotis* Rüpp. Mus. Senckenb. iii. t. 2. f. 1.

8. C. *indicus* Lath.

June, 1848.

C. Hullmandel's Patent Lithofan

CORYTHAIX
macrorhynchus Fras.

The sixth Family,

MUSOPHAGIDÆ, or PLANTAIN-EATERS,

have the Bill moderate, broad at the base, the culmen much elevated, curved, and the sides much compressed towards the tip, which is strongly emarginated; the Wings more or less lengthened and rounded; the Tail long and broad; the Tarsi moderate, strong, and covered in front with broad transverse scales; the Toes long, and the outer one sometimes versatile.

The first Subfamily,

MUSOPHAGINÆ, or PLANTAIN-EATERS,

have the outer toe capable of being placed posteriorly.

MUSOPHAGA *Isert.**

Bill large, broad and elevated at the base, with the culmen much advanced on the forehead, and curved to the tip; the sides compressed, and the lateral margins curved; the nostrils placed near the middle of the upper mandible, open, exposed, and oval. *Wings* short, with the fourth and fifth quills the longest, and the tertials long and broad. *Tail* long, rounded at the end, and with the feathers broad. *Tarsi* shorter than the middle toe, and covered in front with broad transverse scales. *Toes* long, with the lateral toes nearly equal, and the outer scarcely versatile.

The typical species is found on plains near the borders of rivers in Africa, and it lives principally on the fruits of the plantain.

M. *violacea* Isert, Le Vaill. Tour. t. 18. — Cuculus regius *Shaw*, Lev. Mus. pl. p. 167., Swains. Birds of W. Afr. i. pl. 19.

TURACUS *Cuv.*†

Bill short, with the culmen elevated and arched to the tip, the sides much compressed, and the lateral margins finely serrated; the nostrils placed in the middle of the upper mandible, large, and open, but in most more or less covered by the recumbent plumes. *Wings* short and rounded, with the fourth to the seventh quills the longest. *Tail* lengthened, broad, and rounded. *Tarsi* shorter than the middle toe, and covered in front with broad transverse scales. *Toes* long, united at their base, and the sides margined by a membrane; the lateral toes nearly equal, the outer one versatile; the claws moderate, thick, and curved.

These birds are only found on the continent of Africa, and we learn from Dr. A. Smith that one species (*T. porphyreolophus*) inhabits the scattered thickets which occur along the coast of South Africa, in the densest portions of which it seeks its food, which consists of fruits, &c. It is a very shy bird, and, unless the spot upon which it perches

* Established by Isert in 1789 (*Berl. Naturf.* iii. 16.). It is coequal with *Phimus* of Wagler (1827).

† It was in 1799 or 1800 that Cuvier established this genus, which is coequal with *Touraco* of Lacépède (1800 or 1801), *Corythaix* of Illiger (1811), *Opaethus* of Vieillot (1816), and *Spelectes* of Wagler (1827).

after it has been disturbed be well marked, it will rarely be discovered by the hunter. When conscious of danger, it remains perfectly motionless, and, as its usual position is parallel to the branch upon which it rests, there is little to facilitate the discovery. In moving from one part of a branch to another, it generally runs along it, either ascending or descending according to circumstances, and it often pursues a similar course while removing from one side of a tree to the other.

1. T. *persa* (Linn.) Edwards's Birds, pl. 7. — Corythaix Buffoni *Swains.*; Opaethus africanus *Shaw.*
2. T. *purpureus* (Less.) — Corythaix Buffoni *Vieill.* Jard & Selby's Ill. Orn. t. 122.; C. senegalensis *Swains.* Birds of W. Afr. i. pl. 21.
3. T. *alboristatus* Strickl. Pl. enl. 601. — Spelectes corythaix *Wagl.*; Opaethus Persa *Vieill.*
4. T. *erythrolophus* (Vieill.) N. Dict. d'Hist. Nat. xxxiv. 306. — Opaethus paulina *Temm.* Pl. col. 23., Gal. des Ois. t. 49.
5. T. *leucotis* (Rüpp.) Zool. Atlas, t. 3.
6. T. *macrorhynchus* (Fras.) Proc. Z. S. 1839. p. 34.
7. T. *giganteus* (Vieill.) N. Dict. d'Hist. Nat., Le Vaill. Tour. t. 19. — Musophaga cristata *Vieill.*; Corythaix gigas *Steph.*; Crax cyaneus *Griff.* An. Kingd. Birds, iii. pl. p.
8. T. *porphyreolophus* (Vigors), Proc. Z. S. 1831. 93. — Corythaix Burchellii *A. Smith*, Zool. S. Afr. pl. 35., Jard. & Selby's Ill. Orn. n. s. pl. 46.

Schizorhis *Wagl.**

Bill short, with the culmen scarcely higher than broad at the base, much arched to the tip, and the lateral margins sinuated and nearly smooth; the nostrils lateral, exposed, and placed near the basal portion of the culmen, with the opening longitudinal. *Wings* moderate and pointed, with the fourth, fifth, and sixth quills the longest. *Tail* long, and nearly equal, with the feathers broad. *Tarsi* shorter than the middle toe, robust, and covered in front with broad transverse scales. *Toes* long, the lateral toes nearly equal, the outer one scarcely versatile, the base united, and the margins bordered with a membrane; the claws rather strong and curved.

The continent of Africa is the peculiar country for the species of birds that form this genus, and Dr. A. Smith informs us that the favourite resort of the *S. concolor* seemed to be the immediate banks of rivers, where it was seen either perched upon the highest branches of the trees which occurred in those situations, or flitting to and fro among them in search of the fruits, which constitute its principal food. It is a bird of short flight, and, when disturbed and driven from any particular haunt, it seldom passes the nearest tree without alighting, unless it may think itself not sufficiently removed from the source of danger. When flying, it sometimes flaps its wings with considerable quickness and vigour, but more generally it soars along with them completely extended, and even scarcely moves them until it has actually perched. When at rest, and without any suspicion of danger, it has a clumsy dull appearance, with its head sunk to its shoulders, and at such times it utters occasionally a harsh cry resembling "*mea.*" When excited, however, by the appearance of an object of suspicion, or its attention is arrested by any unusual noise, it exhibits a very opposite and elegant appearance; its crest, which in a state of rest is generally recumbent, then becomes erected, while its head, if not its whole body, is moved in various directions, as if endeavouring to discover the cause of its alarm; and at such times its cries are harsher and more frequent. The individuals first discovered were extremely shy and watchful, but as the travellers advanced in the country, where specimens were more abundant, less caution was observed, and there were days when they might have shot at least forty or fifty individuals had it been desirable. Besides the remains of fruits, the wings and other parts of grylli were found in the stomach of several which were examined.

1. S. *africana* (Lath.) Le Vaill. Tour. t. 20. — Musophaga variegata *Vieill.*; M. senegalensis *Licht.* Gal. des Ois. t. 48., Swains. B. of W. Afr. i. t. 20.
2. S. *zonarius* (Rüpp.) Faun. Abyss. t. 4.
3. S. *personata* (Rüpp.) Proc. Z. S. 1842. 8.
4. S. *leucogaster* (Rüpp.) Proc. Z. S. 1842. 9.
5. S. *concolor* (Smith), Report of S. Afr. Exp. App.— Chizaerhis Feliciæ *Less.*

* This genus was originally established under the name of *Chizaerhis* by Wagler in 1827, but in 1829 he changed it to the above word. In 1834 Dr. A. Smith proposed a division with the name of *Corythaixoides*, which he changed to *Coliphimus* in 1836. It is coequal with the one adopted.

C. Hullmandel's Patent Lithotint.

OPISTHOCOMUS
cristatus. Gm.

OPISTHOCOMINÆ.

1. TURACUS persa. 2. SCHIZORHIS africana. 3. MUSOPHAGA violacea. 4. OPISTHOCOMUS cristatus.

The second Subfamily,

OPISTHOCOMINÆ, or HOACTZINS,

have the Toes lengthened, and the outer toe not capable of being placed posteriorly.

OPISTHOCOMUS *Hoffm.**

Bill short, thick; broad at the base, the culmen much curved to the tip, which is abruptly compressed, and obtusely hooked over that of the lower mandible, the gonys of which is short, ascending, and terminating in a strong angle posteriorly; the nostrils lateral, pierced in the middle of the bill, rounded, and surrounded by a membrane. *Wings* long, with the first five quills graduated, and the sixth the longest. *Tail* lengthened, broad, and much rounded at the end. *Tarsi* robust, shorter than the middle toe, and covered with reticulated scales. *Toes* very long, slender, the lateral toes equal, entirely divided at the base, and the outer one not versatile; the claws long, compressed, and much curved. The sides of the head naked.

This remarkable bird is peculiar to the northern parts of South America. It lives in small flocks on the banks of the rivers, and is by no means shy, allowing the hunter to approach very near. If alarmed at the report of a gun, the flock takes flight, crying *cra cra*, and they all alight close to each other on the same branch a few paces further off. Their food consists of the leaves of a tree which the natives call avinga, or those of the Arum arborescens, which causes the flesh of these birds to have a strong musky smell, and to be used as a bait for certain fishes.

O. *cristatus* (Lath.) Pl. enl. 337., Gal. des Ois. t. 193.

* Hoffmansegg established this in 1811 (*Illiger, Prod. Syst. Mam. et Av.*). In 1816 Vieillot proposed *Orthocorys*, which in 1825 he changed to *Sasa*, for the same type.

BUCEROS
rapalensis Hodgs.♀

1

2

COLLECTION NOLL TESTIMONIAL

Hallmandel & Weltaus new Process

1. EURYCEROS Prevosii. 2. BUCEROS CONVEXUS. *Temm.*

The seventh Family,

BUCEROTIDÆ, or HORNBILLS,

have the Bill more or less lengthened, curved, broad at the base, and compressed to the end; with the culmen furnished with a singularly formed helmet, or only curved to the tip, which is acute; the Nostrils basal, and usually rounded: the Wings moderate: the Tail generally long, broad, and more or less graduated: the Tarsi, in most, short and strong: the Toes moderate, strong, and more or less united at their base, especially the outer toe: the Claws short, and rather obtuse.

The only Subfamily,

BUCEROTINÆ, or HORNBILLS,

have similar characters to those given above.

EURYCEROS *Less.**

Bill large, and broad at the base, with the culmen much elevated, projecting on the forehead, keeled, and curved to the tip, which is hooked and strongly emarginated; the sides much compressed from the base to the end; the gonys rather short, and ascending; the nostrils lateral and basal, with the opening rounded and exposed. *Wings* long, with the fourth and fifth quills equal and longest. *Tail* moderate, broad, and rounded. *Tarsi* moderate, rather strong, and covered in front with transverse scales, the divisions of which are slightly apparent. *Toes* long; the inner shorter than the outer toe, the latter united to the first joint; the hind toe long and strong; the claws long, strong, curved, and acute.

The type of this genus is found in Madagascar. Its manners and habits are unknown.

E. *Prevostii* Less. Cent. de Zool. t. 74., Illustr. de Zool. t. 13.

* Established by M. Lesson in 1830 (*Centurie de Zoologie*).

Buceros *Linn.**

Bill large, more or less long, broad at the base, and more or less surmounted by a helmet of various shapes, with the culmen curved, and the sides much compressed to the tip, which is pointed; the lateral margins smooth in the young, and more or less jagged in the adult; the nostrils basal and lateral, with the opening small, exposed, and rounded. *Wings* rather short, with the third quill nearly as long as the fourth and fifth, which are equal and longest. *Tail* generally long, broad, and more or less graduated. *Tarsi* rather short, robust, and covered in front with broad, transverse, strong scales. *Toes* rather long, broad; the outer toe longer than the inner, both united at the base, especially the outer, the union of which is continued to the second joint; the hind toe long, strong, and strongly scutellated above; the claws strong, long, curved, and acute. The face and throat more or less naked, and the latter sometimes furnished with a gular pouch.

The species of this genus are found in Africa, India, and its archipelago. They are usually observed singly, or in small or large parties, in the dense forests or jungles, perched or squatted longitudinally on the highest branches, espécially those of elevated and decayed trees in the neighbourhood of rivers. On the approach of daylight they leave their roosting-places, and proceed to the neighbouring forests in search of fruit-bearing trees, hopping from branch to branch for the fruits which constitute their food, and when evening returns they again repair to the place that they had left at daylight. When they have cleared one neighbourhood of its food, they resort to a fresh locality; which occasions them to be observed at different periods in various places. It is stated by some writers that these birds also feed on carrion, small quadrupeds, birds, and reptiles, pressing them flat in their bills then tossing them in the air, catching them in their mouths, and swallowing them whole. Their flight is heavy and straight, generally at a considerable height; and they make a remarkable noise in striking the air with their wings. The cry consists of a short hoarse croak, but when the bird is excited this is changed to a loud discordant noise. They perforate the trunks of trees from the side, making a hollow in the wood, in which the nest is formed; and the female lays usually four eggs.

1. B. *rhinoceros* Linn. Pl. enl. 934., Levaill. Ois. d'Am. et Ind. t. 2. (bill), Edwards's Birds, pl. 281. B. (bill), Levaill. Ois. d'Am. et Ind. t. 1. (entire bird), Shaw's Nat. Misc. pl. 41. — Buceros africanus *Gmel.*; B. sylvestris *Vieill.* Ois. d'Am. & Ind. t. 13.; B. lunatus *Temm.* Pl. col. 546.; Type of Tragopan *Mœhr.* (1752).

2. B. *bicornis* Linn. Levaill. Ois. d'Am. et Ind. t. 7, 8. t. 4, 5.— Buceros cristatus *Vieill.*

3. ? B. *Homrai* Hodgs. As. Res. 1833. p. 169. pl. — B. cavatus *Shaw*, Gould, Cent. of Birds, pl.

4. B. *coronatus* Bodd. Pl. enl. 873. — Buceros monoceros *Shaw*, Levaill. Ois. d'Am. et Ind. t. 9, 10, 11, 12.

5. B. *pica* Scop. Sonn. Voy. Ind. t. 121. — Buceros malabaricus *Gmel.* Edwards's Birds, pl. 281. D., Levaill. Ois. d'Am. et Ind. t. 14.; B. albirostris *Shaw*, Nat. Misc. pl. 809.; B. leucogaster *Blyth*; B. bicolor *Eyton.*

6. B. *convexus* Temm. Pl. col. 530.

7. B. *violaceus* Shaw, Levaill. Ois. d'Am. et Ind. t. 19.

8. B. *malayanus* Raffl. Linn. Trans. xiii. p. 292. — Buceros anthracicus *Temm.* Pl. col. 529.; B. pusaran *Raffl.* ?

9. B. *buccinator* Temm. Pl. col. 284.

10. B. *cristatus* Rüpp. Faun. Abyss. t. 1.

11. B. *atratus* Temm. Pl. col. 558.

12. B. *galeritus* Temm. Pl. co.. 520.

13. B. *elatus* Temm. Pl. col. 521. f. 1.

14. B. *cylindricus* Temm. Pl. col. 521. f. 2.

15. B. *hydrocorax* Linn. Pl. enl. 283. Levaill. Ois. d'Am. et Ind. t. 6., Levaill. Ois. d'Afr. t. 240.

16. B. *comatus* Raffl. Linn. Trans. xiii. p. 339., Verh. Natuurl. Gesch. t. 4.

17. B. *scutatus* Bodd. Pl. enl. 933. — Buceros galeatus *Gmel.* Edwards's Birds, pl. 281. f. c., Mag. de Zool. 1835. Ois. t. 38.

18. B. *plicatus* Lath. Levaill. Ois. d'Afr. t. 239. — Buceros undulatus *Shaw*; B. niger *Vieill.* Levaill. Ois. d'Am. et Ind. t. 20, 21.; B. javanicus *Shaw*; B. javanus *Vieill.* Levaill. Ois. d'Am. et Ind. t. 22.; B. subruficollis *Blyth.*

19. B. *ruficollis* Vieill. Pl. col. 557., La Peyr. & Labill. Voy. t. 11.

20. B. *corrugatus* Temm. Pl. col. 531. — Buceros rugosus *Begbie*; B. gracilis *Temm.* Pl. col. 535.

21. ? B. *lugubris* Begbie, Malay Penins. 1834. p.

22. B. *cassidix* Temm. Pl. col. 210., Verh. Natuurl. Gesch. t. 4. bis.

* Established by Linnæus in 1748. *Caryocatactes* of Mœhring (1752) and *Hydrocorax* of Brisson (1760) are synonymous. It embraces *Tragopan* of Mœhring (1752) and *Tockus* of M. Lesson (1831).

23. B. *Panini* Bodd. Pl. enl. 280, 281., Levaill. Ois. d'Am. et Ind. t. 16, 17., Sonn. Voy. t. 82, 83. — Buceros panayensis *Scop.*; B. manilla *Bodd.* Pl. enl. 891.; B. manillensis *Gmel.* Levaill. Ois. d'Am. et Ind. t. 18.; B. sulcirostris *Wagl.* Meyen, Nov. Acta, &c. xiv. t. 13.

24. B. *nipalensis* Hodgs. As. Res. 1833. 178. pl. 1, 2.

25. B. *sulcatus* Temm. Pl. col. 69. — Buceros leucocephalus *Vieill.*

26. B. *exaratus* Temm. Pl. col. 211.

27. B. *ginginianus* Lath. Sonn. Voy. t. 120. Levaill. Ois. d'Am. et Ind. t. 15.— Buceros oxyurus *Wagl.*; B. bicornis *Scop.*; B. bengalensis *Gray.*

28. B. *fusciatus* Shaw, Levaill. Ois. d'Afr. t. 233. — Buceros melanoleucus *Vieill.*

29. B. *melanoleucus* Licht. Catal. Dupl. Berl. Mus. p. 8., Levaill. Ois. d'Afr. t. 234, 235. — Buceros coronatus *Shaw*, Swains. Zool. Illustr. pl. 178., Ency. Méth. Ois. t. 240. f. 4.

30. B. *gingalensis* Shaw, Levaill. Ois. d'Am. et Ind. t. 23. — Buceros gingala *Vieill.*; B. pyrrhopygus *Wagl.*

31. B. *cineraceus* Temm. Pl. col. (descript.).

32. B. *nasutus* Lian. Pl. enl. 890., Levaill. Ois. d'Afr. t. 236, 237. — Buceros hastatus *Cuv.*

33. B. *pœcilorhynchus* Lafr. Rev. Zool. 1839. p. 257.

34. B. *erythrorhynchos* Temm. Pl. enl. 260., Pl. col. 283., Levaill. Ois. d'Afr. t. 238. — Type of Tockus *Less.* (1831).

35. B. *limbatus* Rüpp. Faun. Abyss. t. 2. f. 1.

36. B. *flavirostris* Rüpp. Faun. Abyss. t. 2. f. 2.

37. ? B. *griseus* Lath.

Bucorvus *Less.**

The characters similar to those of the former genus, except that the *Tarsi* are very long, strong, and covered in front with large scales, those near the toes being hexagonal. *Toes* short, thick; the inner toe rather shorter than the outer, both united at the base, especially that of the outer; the hind toe long and strong; the claws moderate, curved, and acute.

This species inhabits the continent of Africa, and is usually seen on the ground, busily engaged in searching it for the large beetles which constitute the chief portion of its food. It is very active in leaping along the ground, and flies well and to a great distance at a time. The nest is said to be made in large trees; it is very large, and covered as in the magpie's, with an entrance on one side.

B. *abyssinicus* (Gmel.) Pl. enl. 779., Levaill. Ois. d'Afr. t. 230, 231, 232. — Buceros carunculatus *Wagl.*; B. Leadbeateri *Vigors.*

* It was in 1831 that M. Lesson established this division (*Traité d'Ornithologie*).

May, 1847.

C Hullmandel's Patent Lithotint

RHAMPHASTOS
citreolæmus Gould.

1

2

C. Hullmandel's Patent Lithotint.

1. RHAMPHASTOS tucanus. 2. PTEROGLOSSUS aracari.

The third Order,

SCANSORES,*

are at once distinguished by the position of their Toes, which are placed two anteriorly, and two posteriorly.

The first Family,

RAMPHASTIDÆ, or Toucans,

have the Bill much prolonged, broad at base, with the culmen curved, and the sides compressed to the tip, and the lateral margins more or less serrated.

The only Subfamily,

RAMPHASTINÆ, or Toucans,

have the same characters as previously given for the family.

Ramphastos *Linn.*†

Bill very long, smooth, and broad at the base, with the culmen rounded and curved to the tip, which is acute; the sides compressed, and the lateral margins strongly dentated; the nostrils basal, and concealed by the elevated posterior projection of the culmen. *Wings* short and rounded, with the first four quills graduated, and each narrowed at the tip, with the fifth the longest. *Tail* short, and nearly even at the end. *Tarsi* the length of the outer anterior toe, and covered with prominent broad scales. *Toes* with the outer pair longest, and nearly equal; the inner pair unequal; the claws strong, compressed, and slightly curved.

These singular birds are found in the tropical parts of South America. They are very shy and cautious, and are usually observed hopping actively from branch to branch, amid the lofty foliage of the highest trees of the forests. Various fruits, especially the banana, form their chief subsistence; they will also feed on small reptiles, larvæ of insects,

* *Zygodactyli* Vieill., *Prehensores* Blainv.

† Linnæus established this genus in 1744 (*Systema Naturæ*). *Bucco* of Mœhring (1752) and *Tucana* of Brisson (1760) are coequal with the one adopted.

young birds, and eggs, for which latter they will readily attack the nests of other birds. It is in the holes in trunks of trees that the female deposits generally two eggs. These birds, when in a state of repose, resemble a round ball of feathers, as their head is usually placed over the shoulders, while the bill is entirely concealed beneath the feathers of the back and the greater wing coverts; the tail is brought over the back, and their body is closely applied to the branch on which they are perched.

1. R. *erythrorhynchos* Gmel. Edwards's Birds, pl. 238., Pl. enl. 262., Le Vaill. Ois. de Par. t. 3, 4. — Ramphastos Levaillantii *Wagl.* Gould, Monogr. pl. 3.
2. R. *Cuvieri* Wagl. Syst. Av. sp. 5., Gould, Monogr. pl. 2.
3. ? R. *Forsterorum* Wagl. Syst. Av. sp. 8., Le Vaill. Ois. de Par. t. 5.
4. R. *culminatus* Gould, Proc. Z. S. 1833. p. 70., Monogr. pl. 1.
5. R. *tocard* Vieill. N. Dict. d'Hist. Nat. xxxiv. p. 281., Le Vaill. Ois. de Par. t. 9. — Ramphastos ambiguus *Swains.* Zool. Ill. pl. 168.; R. Swainsoni *Gould,* Monogr. pl. 8.; R. eugnathos *Wagl.*
6. R. *piscivorus* Linn. Edwards's Birds, pl. 64. 329. — Ramphastos tucanus *Shaw;* R. carinatus *Swains.* Zool. Ill. pl. 45.; R. callorhynchus *Wagl.* Gould, Monogr. pl. 7.
7. R. *Toco* Gmel. Pl. enl. 82., Le Vaill. Ois. de Par. t. 2., Lath. Gen. Syn. pl. 9., Gould, Monogr. pl. 6.
8. ? R. *niveus* Less. Compl. Buff. p. 184.
9. R. *vitellinus* Ill. Swains. Zool. Ill. pl. 56., Le Vaill. Ois. de Par. t. 17., Gould, Monogr. pl. 9.
10. R. *Tucanus* Linn. Pl. enl. 307. — Ramphastos Ariel *Vigors,* Zool. Journ. ii. 466.; R. Temminckii *Wagl.* Gould, Monogr. pl. 10.
11. R. *dicolorus* Gmel. Pl. enl. 269., Le Vaill. Ois. de Par. t. 8. — Ramphastos Tucai *Licht.*; R. chlororhynchos *Temm.* Swains. Zool. Ill. pl. 108., Jard. & Selby, Ill. Orn. pl. 29., Gould, Monogr. pl. 11.
12. ? R. *maximus* Cuv. Le Vaill. Ois. de Par. t. 6. — Ramphastos erythrosoma *Wagl.*
13. R. *citreopygus* Gould, Proc. Z. S. 1835. p. 156., Monogr. pl. 4. — Ramphastos sulfuratus *Less.*
14. R. *osculans* Gould, Proc. Z. S. 1835. p. 156., Monogr. pl. 5.
15. R. *citreolæmus* Gould, Proc. Z. S. 1843. p. 147.
16. ? R. *picatus* Linn. Albin's pl. 25. — Ramphastos Aldrovandi *Shaw.*

PTEROGLOSSUS *Ill.**

Bill generally prolonged, smooth, and broad at the base, with the culmen flattened at the base, rounded, and curved to the tip; the sides compressed, and the lateral margins slightly dentated; the nostrils basal, and pierced on the flattened surface of the culmen, exposed, and rounded. *Wings* short and rounded, with the fourth, fifth, and sixth quills the longest. *Tail* more or less lengthened and graduated. *Tarsi* the length of the outer anterior toe, and covered with broad scales. *Toes* with the outer pair the longest and equal, and the inner pair unequal and short; the claws short and slightly curved.

The birds that compose this genus are found in the same countries as those previously mentioned, and their habits and manners are also similar.

1. P. *aracari* (Linn.) Ill. Pl. enl. 166., Le Vaill. Ois. de Par. t. 10., Gould, Monogr. pl. 12.
2. P. *castanotis* Gould, Proc. Z. S. 1833. p. 119., Monogr. pl. 13.
3. P. *regalis* Licht. Gould, Monogr. pl. 14. — Pteroglossus torquatus *Gmel.? Wagl.*; P. ambiguus *Less.*
4. P. *pluricinctus* Gould, Proc. Z. S. 1835. p. 157., Le Vaill. Ois. de Par. t. 11., Monogr. pl. 15.
5. P. *bitorquatus* Vigors, Journ. Zool. ii. p. 481., Gould, Monogr. pl. 16.
6. P. *Azaræ* (Vieill.) Wagl. N. Dict. d'Hist. Nat. xxxiv. p. 282., Le Vaill. Ois. de Par. Suppl. t. A., Gould, Monogr. pl. 17.
7. P. *flavirostris* Fr. Proc. Z. S. 1840. p. 61.
8. P. *viridis* (Linn.) Ill. Pl. enl. 727, 728., Le Vaill. Ois. de Par. t. 16, 17., Swains. Zool. Ill. pl. 169., Gould, Monogr. pl. 21.
9. P. *hypoglaucus* Gould, Proc. Z. S. 1831. p. 70., Monogr. pl. 19.
10. P. *Bailloni* (Vieill.) Wagl. N. Dict. d'Hist. Nat. xxxiv. p. 283., Le Vaill. Ois. de Par. t. 18. — Pteroglossus croceus *Jard. & Selby,* Ill. Orn. pl. 6., Gould, Monogr. pl. 20.

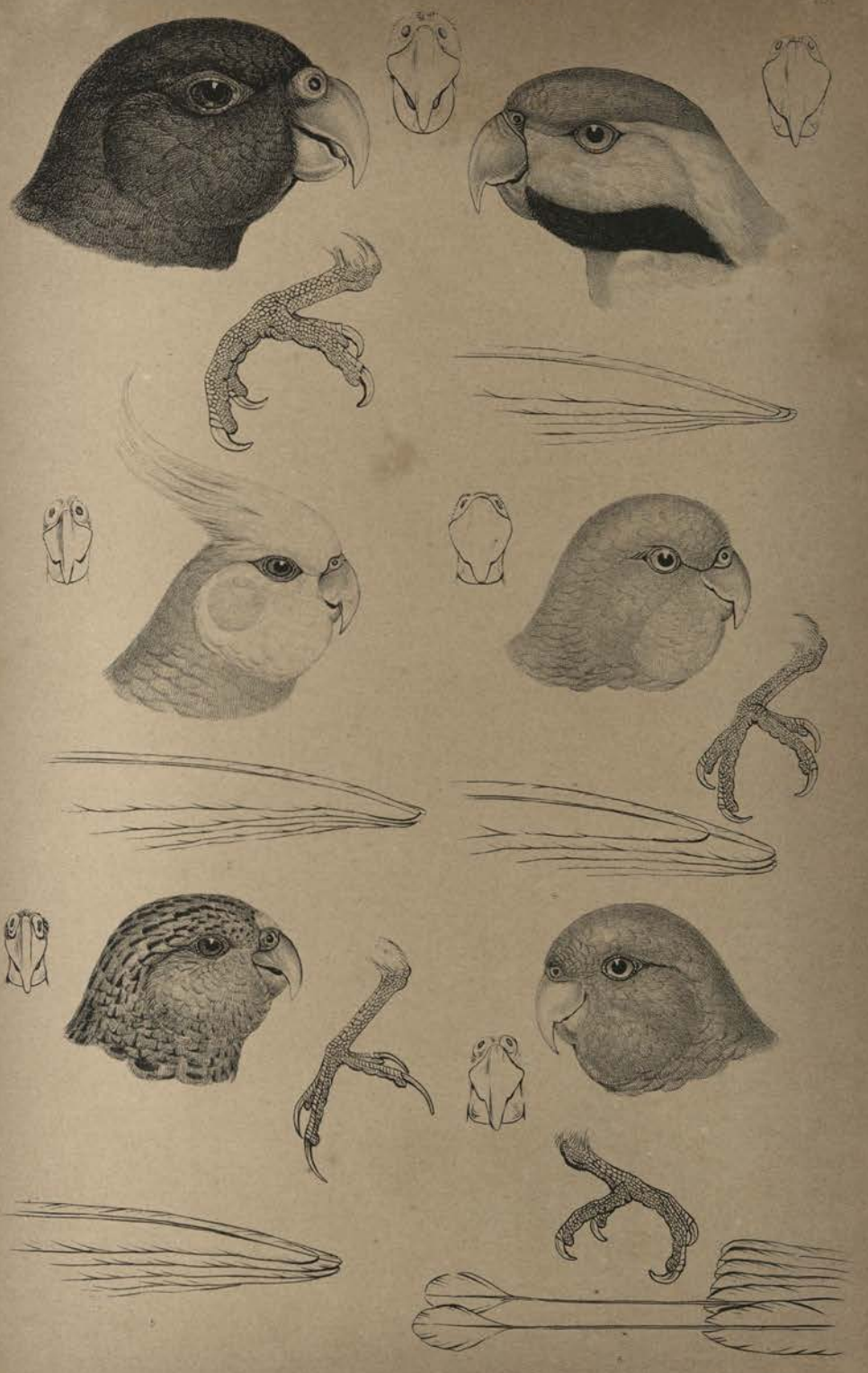
* Established by Illiger in 1811 (*Prodromus Syst. Mamm. et Avium,* p. 202.). *Aracari* of M. Lesson (1828) is coequal. It embraces *Selenidera* (1837) and *Aulacorhynchus* (1834) of Mr. Gould; this latter name having been previously employed, it was changed by me to *Aulacoramphus* (1840).

11. P. *Humboldtii* Wagl. Syst. Av. sp. 4., Gould, Monogr. pl. 22.
12. P. *inscriptus* Swains. Zool. Ill. pl. 90., Gould, Monogr. pl. 23. — Pteroglossus scriptus *Temm.*
13. P. *prasinus* Licht. Gould, Monogr. pl. 29.
14. P. *pœcilosternus* Gould, Proc. Z. S. 1843. p. 147.
15. P. *erythropygus* Gould. Proc. Z. S. 1843. p. 15., Voy. of the Sulph. Birds, pl. 28.
16. P. *Beauhernaisii* Wagl. Isis, 1832. p. 279. — Pteroglossus ulocomus *Gould,* Proc. Z. S. 1833. p. 38., Monogr. pl. 18.
17. P. *Pœppigii* Wagl. 1832. p. 1229.
18. P. *nigrirostris* Waterh. Proc. Z. S. 1839. p. 111.
19. P. *Gouldii* Natt. Proc. Z. S. 1837. p. 44., Gould, Icon. Avium, pt. 1. pl. 7. — Type of Selenidera *Gould* (1837).
20. P. *maculirostris* Licht. Le Vaill. Ois. de Par. t. 15., Suppl. t. A. A., Jard. & Selby, Ill. Orn. pl. 26. — Ramphastos maculatus *Vieill.* Gal. des Ois. t., Gould, Monogr. pl. 24.
21. P. *Nattereri* Gould, Proc. Z. S. 1835. p. 157., Monogr. pl. 25.
22. P. *Reinwardtii* Wagl. Syst. Av. sp. 11., Gould, Monogr. pl. 26.
23. P. *Langsdorffii* Wagl. Syst. Av. sp. 12., Gould, Monogr. pl. 28.
24. P. *piperivorus* (Linn.) Pl. enl. 577. 729., Edwards's Birds, pl. 330., Le Vaill. Ois. de Par. t. 13, 14., Gould, Monogr. pl. 27. — Pteroglossus culik *Wagl.*
25. P. *sulcatus* Swains. Journ. Roy. Inst. ix. 267., Zool. Ill. pl. 44., Pl. col. 356., Gould, Monogr. pl. 31.; Type of Aulacorhynchus *Gould* (1824).
26. P. *pavoninus* (Gmel.?) Wagl. Gould, Monogr. pl. 30.
27. P. *Derbyanus* Gould, Proc. Z. S. 1835. p. 49., Monogr. pl. 32.
28. P. *hæmatopygus* Gould, Proc. Z. S. 1834. p. 147., Monogr. pl. 33.
29. P. *atrogularis* Gould, Monogr. Sturm's Edit. pl.
30. P. *cæruleicinctus* D'Orb. Voy. dans l'Amér. Mér. Ois. t. 66. f. 2.— Pteroglossus Lichtensteinii *Gould,* Monogr. Sturm's Edit. pl.
31. P. *albivittatus* Bois. Rev. Zool. 1840. p. 70.
32. ? P. *brevirostris* Less. Tr. d'Orn. p. 178.
33. ? P. *luteus* (Gmel.).
34. ? P. *cæruleus* (Gmel.).
35. ? P. *indicus* (Shaw). Mill. Plates, pl. 57.
36. ? P. *dubius* (Gmel.).
37. ? P. *glaber* (Shaw).

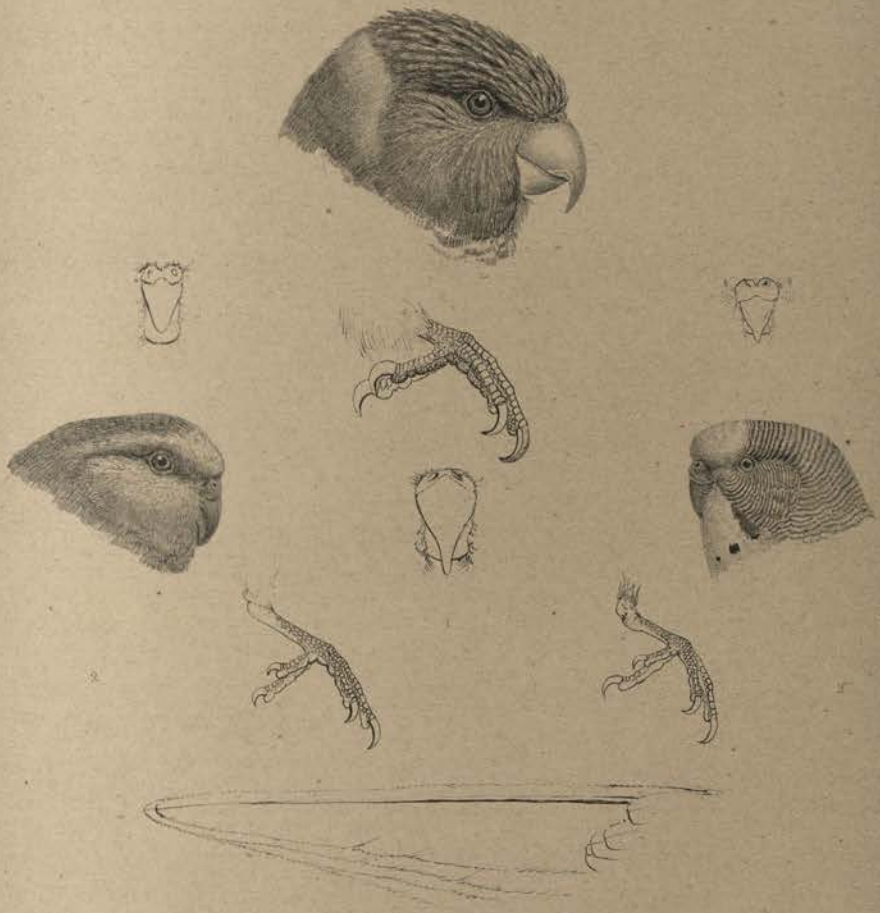
April, 1846.

C.Hullmandel's Patent Lithotint

PLATYCERCUS
cornutus (Lath.)



1. CORACOPSIS nigra. 2. PALÆORNIS malaccensis. 3. NYMPHICUS Novæ Hollandiæ.
4. PLATYCERCUS Adelaidæ. 5. PEZOPORUS formosus. 6. PSEUDOTURNIX planiceps.



COLUMBIA UNIVERSITY

1 TRICHOGLOSSUS multicolor. 2 EUPHEMA pulchella. 3 MELOPSITTACUS undulatus.

Order III. SCANSORES.

The second Family,

PSITTACIDÆ, or Parrots,

have the Bill more or less large and strong, with the culmen arched to the tip, which is prolonged and acute, the lateral margins sometimes dentated, and the base covered by a cere, of greater or less size, in which the nostrils are placed; the Wings and the Tail generally long; and the Tarsi usually very short and robust.

The first Subfamily,

PEZOPORINÆ, or Ground Parrakeets,

have the Bill moderate, with the culmen usually rounded and arched to the tip, which is sometimes dentated; the Tarsi more or less short and robust; and the Tail broad, lengthened, and more or less graduated, with the ends of the feathers narrowed, and rounded or pointed.

Nymphicus *Wagl.**

Bill moderate, compressed on the sides towards the culmen, which is curved to the acute tip; the lateral margins strongly dentated; the gonys broad and angular; the nostrils basal, lateral, placed in a short rounded cere near the culmen, and with the opening large. *Wings* very long, with the second quill the longest. *Tail* very long, broad, and rounded on the sides, with the two middle feathers prolonged beyond the others, and pointed. *Tarsi* short, stout, and covered with small scales. *Toes* long and slender, with the outer anterior one the longest, and all covered with small scales, and armed with acute, slightly curved claws.

The type is peculiar to Australia. It is a migratory bird, congregating in immense flocks before taking its departure for a fresh locality. Mr. Gould observes that he has seen the ground quite covered by them while engaged in procuring food; and it is not an unusual circumstance to see hundreds together on the dead branches of the gum trees in the neighbourhood of water. Its form admirably adapts it for terrestrial progression; hence it is enabled readily to procure the seeds of the various grasses, upon which it almost solely subsists. Its flight is even and easy, and is capable of being long protracted. When roused from the ground, it flies up into the nearest trees, almost invariably selecting a dead branch, upon which it frequently perches lengthwise. It breeds in the holes of gum and other trees growing on the flats and in the neighbourhood of water. The eggs are five or six in number.

* Wagler established this genus in 1830 (*Abhandl. Akad. München*, 1832, p. 490.). *Calopsitta* of M. Lesson (1831) and *Leptolophus* of Mr. Swainson (1832) are synonymous.

N. *novæ hollandiæ* (Gmel.) Wagl. Lear's Parr. pl. 27. — Calopsitta Guy *Less.* Ill. Zool. t. 112.; Leptolophus auricomis *Swains.* | Zool. Ill. n. s. pl. 112., Nat. Libr. Parr. pl. 30., Gould, B. of Austr. pl.

Coracopsis *Wagl.**

Bill large, with the culmen rounded and much curved to the tip, which is long and acute; the lateral margins nearly entire and curved; the lower mandible longer than deep, with the gonys much curved upwards to the tip, and rounded; the nostrils basal, lateral, and placed in the rounded cere, near the culmen. *Wings* long, with the second quill the longest. *Tail* long, broad, and slightly rounded. *Tarsi* short, strong, and covered with small scales. *Toes* long and strong, with the anterior outer toe rather the longest; the claws moderate and curved.

The two species of this genus are found in Madagascar and South Africa.

1. C. *muscarina* (Briss.) Wagl. Pl. enl. 35.

2. C. *nigra* (Linn.) Wagl. Edwards's Birds, pl. 5., Le Vaill. Perr. t. 81, 82.—Psittacus obscurus *Bechst.*; P. vaza *Shaw.*

Platycercus *Vigors.*†

Bill moderate, with the sides swollen, and the culmen rounded, and arched to the tip, which is rather obtuse; the lateral margins curved and slightly dentated, or entire; the gonys broad, rather biangular on the sides, and curved upwards; the nostrils basal, lateral, exposed, and rounded, and placed in a small rounded cere near the culmen. *Wings* moderate and concave, with the first quill shorter than the second and third, which are nearly equal, and longest, and the webs of the first four quills suddenly dilated near the base. *Tail* lengthened, broad, and nearly even, or much graduated; with the feathers towards the tip more or less narrowed, and rounded or pointed. *Tarsi* shorter than the middle toe, and covered with minute scales. *Toes* moderate, much padded beneath, the outer anterior one the longest; and the claws long, compressed, curved, and acute.

The species are most numerous in Australia, and some are found in New Zealand and New Guinea. They are usually seen in small groups of six to twenty in number. They always collect in large flocks when they migrate to a fresh locality in search of subsistence. As their principal food consists of grass seeds, it is most usual to observe them on the ground, walking about and searching among the blades of grass. Others also feed on fruits and berries, and attack the Indian corn as soon as it becomes ripe, as well as the young wheat, causing great destruction to the crops. When alarmed they generally fly to the branches of the nearest tree, remaining until the cause of their fear has disappeared. The eggs are deposited on the decayed wood, or on feathers, in holes formed in the trunks of rotten trees. They are generally four to six in number.

* Established by Wagler in 1830 (*Abhandl. Akad. München*, 1832, p. 501.). *Muscarinus* of M. Lesson (1831) and *Vigorsia* of Mr. Swainson (1837) are coequal.

† It was in 1825 that Vigors established this genus (*Zoological Journal*, i. 527.). It embraces *Aprosmictus* (1842) and *Psephotus* (1845) of Mr. Gould.

1. P. *Pennantii* (Lath.) Vig. Phil. Bot. Bay, pl. p. 154. — Psittacus gloriosus *Shaw*, Nat. Misc. pl. 53.; P. splendidus *Shaw*, Mus. Lev. pl. 7., Le Vaill. Perr. t. 78.; P. elegans *Gmel.*, Le Vaill. Perr. t. 79., Nat. Libr. Parr. pl. 25.

2. P. *Adelaidæ* Gould, Proc. Z. S. 1840. p. 163.—B. of Austr. pl.

3. P. *flaveolus* Gould, Proc. Z. S. 1837. 26., Gould, Syn. B. of Austr. pl. f. 1. (head), B. of Austr. pl.

4. P. *ignitus* Leadb. Proc. Z. S. 1837. 8., Gould, Syn. B. of Austr. pl. f. 1. (head).

5. P. *palliceps* Vigors, Lear's Parr. pl. 19., Gould, Syn. B. of Austr. pl. f. 3. (head), B. of Austr. pl., Nat. Libr. Parr. pl. 26.

6. P. *icterotis* (Temm.) Wagl. Trans. Linn. Soc. xiii. 120. — Platycercus Stanleyi *Vigors*, Lear's Parr. pl. 23, 24., Jard. & Selby, Ill. Orn. pl. 108., Gould, Syn. B. of Austr. pl. f. 3. (head).

7. P. *eximius* (Shaw) Vig. & Horsf. Nat. Misc. pl. 93., Shaw, Zool. N. Holl. t. 1.—Psittacus capitatus *Shaw*, Le Vaill. Perr. t. 28, 29.; P. omnicolor *Bechst.*, P. Pennantii ♀ *Wolf*, Gould, Syn. B. of Austr. pl. f. 2. (head).

8. P. *caledonicus* (Gmel.) Wagl. Ellis's Icon. ined. 16. — Le Vaill. Perr. t. 80.—Psittacus Brownii *Kuhl*; P. flavigaster *Temm.*; P. flaviventris *Vigors & Horsf.*

9. ? P. *jonquillaceus* (Vieill.) Wagl.

10. P. *semitorquatus* Quoy & Gaim. Voy. de l'Astrol. Ois. t. 23., Gould, B. of Austr. pl.

11. P. *zonarius* (Shaw) Wagl. Nat. Misc. pl. 657. — Psittacus viridis *Shaw*; P. cyanomelas *Kuhl*; P. Baueri *Temm.*, Donov. Nat. Rep. pl. 64., Lear's Parr. pl. 17., Gould, Syn. B. of Austr. pl. f. 3. (head), B. of Austr. pl.

12. P. *pileatus* Vigors, Zool. Journ. v. p. 274., Voy. de l'Astrol. Ois. t. 22., Lear's Parr. pl. 21, 22., Jard. & Selby, Ill. Orn. pl. 102.

13. P. *venustus* (Brown) Wagl. — Psittacus Brownii *Temm.* Don. Nat. Rep. pl. 64. ? Lear's Parr. pl. 20., Gould, B. of Austr. pl.

14. P. *hæmatonotus* Gould, Proc. Z. S. 1837. 151.

15. P. *hæmatogaster* Gould, Proc. Z. S. 1837. 89.

16. P. *melanurus* (Vigors) Lear's Parr. pl. 28.—Palæornis anthopeplus *Vigors*, Lear's Parr. pl. 29.

17. P. *multicolor* (Brown), Vig. & Horsf. — Type of Psephotus *Gould* (1845).

18. P. *Barnardii* (Lath.) Vig. & Horsf. Linn. Trans. xv. 283., Lear's Parr. pl. 18., Gould, Syn. B. of Austr. pl. f. 1., B. of Austr. pl.

19. P. *unicolor* Vigors, Proc. Z. S. 1831. 24., Lear's Parr. pl. 25.

20. P. *purpureocephalus* Quoy. & Gaim. Voy. de l'Astrol. Ois. t. 22.

21. P. *rufifrons* Less. Tr. d'Orn. p. 208.

22. P. *ater* (Scop.) Sonn. Voy. t. 110., Le Vaill. Perr. t. 49. — Psittacus novæ guineæ *Gmel.*

23. P. *erythropterus* (Lath.) Vig. & Horsf.—Psittacus melanotis *Shaw*, Nat. Misc. pl. 653., Gould, B. of Austr. pl., Lear's Parr. pl. 14, 15.; Type of Aprosmictus *Gould* (1842).

24. P. *vulneratus* Wagl. — Psittacus erythropterus *Kuhl*, Voy. de l'Uranie, t. 27.

25. P. *scapulatus* (Bechst.) Vig. & Horsf., Phil. Bot. Bay, pl. 153., White, Journ. pl. p. 168. — Psittacus tabuensis var. β *Lath.* Le Vaill. Perr. t. 55, 56.; P. cyanopygius *Vieill.*; Pl. scapularis *Swains.* Gould, B. of Austr. pl.

26. P. *amboinensis* (Linn.) Pl. enl. 240. — Psittacus dorsalis *Quoy. & Gaim.* Voy. de l'Astrol. Ois. t. 21. f. 3.

27. P. *hypophonicus* (Müll. & Schel.) Verh. Nat. Gesch. Nederl. p. 181.

28. P. *tabuensis* (Gmel.) Lath. Syn. pl. 7. — Psittacus hysginis *Forst.* Desc. Anim. p. 159., Icon. ined. 42.; P. atropurpureus *Shaw*, Mus. Lev. pl. p. 142., Lear's Parr. pl. 16., Jard. & Selby, Ill. Orn. pl. 74., Gould, Syn. B. of Austr. pl. f. 2. (head), Ellis, Icon. ined. 11.

29. P. *pacificus* (Forst.) Desc. Anim. p. 238., Icon. ined. 47. — Psittacus novæ zealandiæ *Gmel.*; P. zealandicus *Lath.*; P. erythronotus *Kuhl*, Ellis, Icon. ined. 12. ?

30. P. *novæ zealandiæ* (Sparrm.) Mus. Carls. 28. — Psittacus pacificus var. ? *Forst.* Icon. ined. 45, 46.; Lathamus Sparrmannii *Less.*

31. P. *erythrotis* Wagl. — Psittacus pacificus *Gmel.* Zool. Journ. 1825. Suppl. pl. 1.; P. novæ zealandiæ *Kuhl.*

32. P. *auriceps* (Kuhl), Vigors, Zool. Journ. 1825. Suppl. pl. 2. — Psittacus pacificus var. δ *Gmel.*

33. P. *ulietanus* (Gmel.) Vigors, Zool. Journ. 1825. Suppl. pl. 3.

34. P. *cornutus* (Gmel.) Steph. — Psittacus bisetis *Forst.* Desc. Anim. p. 258., Icon. ined. 43.

Prioniturus *Wagl.**

Tail moderate, with the sides rather rounded, the two middle feathers prolonged beyond the others, and the shafts bare of webs except at their tips. *Tarsi* very short, robust, and covered with small scales. *Toes* long, with the outer pair of equal length; the claws strong, compressed, and acute. The other characters like those of *Platycercus*.

It is in the Philippine Islands that this type has been found, but its habits and manners are unknown.

P. *platurus* (Vieill.) Wagl. Ency. Méth. p. 1367. — Psittacus setarius *Temm.* Pl. col. 15.; P. discurus *Vieill.* Gal. des Ois. t. 24.

* Established by Wagler in 1830 (*Abhandl. Akad. München*, 1832, p. 490.)

Pezoporus *Illig.**

Bill moderate, with the culmen and the lateral margins arched to the tip, which is acute and entire; the gonys broad, keeled, and curved upwards; the nostrils basal, lateral, and placed in a broad rounded cere near the culmen. *Wings* moderate, with the first quill nearly the length of the second and third, which are the longest. *Tail* lengthened, cuneated, and slender, with the ends of the feathers gradually narrowed and acute. *Tarsi* nearly as long as the middle toe, slender, and covered with minute scales. *Toes* long and slender; the claws very long, slightly curved, and acute.

The type of this genus is only found in Australia, where it inhabits the shrubby or bushy places. It is usually seen, says Mr. Caley, on the ground, searching for the seeds of the grasses on which it subsists. When surprised it takes a short flight, and again alights on the ground among the bushes.

P. *formosus* (Lath.) Ill. — Psittacus terrestris *Shaw*, Zool. of N. Holl. pl. 3., Lev. Mus. pl. 55., Nat. Misc. pl. 228., Le Vaill. Perr. t. 32., Nat. Libr. Parr. pl. 29.

Palæornis *Vigors.*†

Bill large, with the culmen much arched to the tip, which is acute, and the sides compressed towards the culmen, the upper mandible small, scarcely deeper than long, with the gonys broad and keeled; the nostrils basal, lateral, rounded, and placed in a narrow cere. *Wings* moderate, with the first quill rather shorter than the second, which is the longest. *Tail* lengthened and graduated, with the two middle feathers very long, attenuated, and the ends rounded. *Tarsi* very short, strong, and covered with small scales. *Toes* moderate, much padded beneath, the outer anterior toe the longest; the claws moderate, compressed, and arched.

These birds are most numerous in India and its archipelago; one species is found in Australia. They frequent the jungles, cultivated ground, and gardens, committing great destruction on various kinds of grains and fruits. On their food becoming scarce they seek a fresh locality. During these migrations they generally keep close to the tops of the large trees, and on discovering food take a short circle round the tree, with a steady sailing flight, and alighting on the branches speedily commence their attack on the fruits. They fly with rapidity, and generally keep up a loud whistling note at the same time. The female lays three or four eggs in holes of trees.

1. P. *Alexandri* (Linn.) Vigors, Edwards's Birds, pl. 292., Sonn. Voy. t. 43. — Psittacus guianensis *Scop.*; P. Sonneratii *Gmel.* Nat. Libr. Parr. pl. 2., Pl. enl. 642., Le Vaill. Perr. t. 30., Pl. enl. 239.; Ps. Eupatria *Gmel.* Le Vaill. Perr. t. 73.; Palæornis nipalensis *Hodgs.*

2. P. *cucullatus* Vigors, Lear's Parr. pl. 32.

3. P. *torquatus* (Briss.) Vigors, Pl. enl. 215. — Psittacus eques *Bodd.* Le Vaill. Perr. t. 39.; Psittacus bicollaris *Vieill.*; P. bitorquatus *Kuhl*, Pl. enl. 551.; P. semirostris *Herm.* Le Vaill. Perr. t. 25.; P. manillensis *Bechst.*; P. frenatus *Ill.*; P. docilis *Vieill.* Edwards's Birds, pl. 175., P. rufirostris *Gmel.* Pl. enl. 550., Le Vaill. Perr. t. 23. 42, 43.; Palæornis cubicularis *Wagl.* Lear's Parr. pl. 33.; P. melanorhynchus *Sykes.*

4. P. *borneus* Wagl. Albin's Birds, ii. pl. 18. — Psittacus Alexandri *Linn.* ?

5. P. *bengalensis* (Linn.) Edwards's Birds, pl. 233., Sonn. Voy.

* Established by Illiger in 1811 (*Prodr. Mamm. et Av.* p. 201.).

† The late Mr. Vigors established this genus in 1825 (*Zoological Journal*, 1825, p. 46.). It includes *Polytelis* of Wagler (1830) and *Psittinus* of Mr. Blyth (1842).

t. 42., Pl. enl. 888. — Psittacus erythrocephalus *Gmel.* var. β; P. ginginianus var β *Lath.*; P. rhodocephalus *Shaw,* Mus. Lev. pl. 45., Le Vaill. Perr. t. 74., Pl. enl. 264.; P. narcissus *Lath.* Syn. pl. 123., Le Vaill. Perr. t. 75.; P. annulatus *Bechst.*; P. flavitorquis *Shaw*; P. flavicollaris *Vigors,* Le Vaill. Perr. t. 76.

6. P. *cyanocephalus* (Gmel.) Edwards's Birds, pl. 292., Pl. enl. 192., Le Vaill. Perr. t. 26. t. 61. ? — Psittacus xanthosomus *Bechst.*; P. ternatensis *Vieill.*

7. P. *rosaceus* Vigors, Zool. Journ. v. p. 274., Lear's Parr. pl. 30.

8. P. *incarnatus* (Gmel.) Wagl. Edwards's Birds, pl. 236., Le Vaill. Perr. t. 46. — Palæornis inornatus *Vigors.*

9. P. *columboïdes* Vigors, Zool. Journ. 1830. p. 274., Lear's Parr. pl. 31. — Psittacus (Conurus) himalayanus *Less.*

10. P. *longicauda* (Bodd.) Pl. enl. 887. — Psittacus malaccensis *Gmel.* Le Vaill. Perr. t. 72.; Psittacus erythrocephalus var. δ malaccensis *Gmel.*; P. ginginianus var. δ *Lath.*; P. erubescens *Shaw*; Conurus barbatulatus *Kuhl,* Nat. Libr. Parr. pl. 3.; Type of Psittinus *Blyth* (1842).

11. P. *melanorhynchus* Wagl. — Psittacus pondicerianus var. β *Bechst.*

12. P. *pondicerianus,* Pl. enl. 517. — Psittacus mystaceus *Shaw*; P. javanicus *Osbeck*; P. Alexandri var. ε *Gmel.*; P. Osbeckii *Lath.* Le Vaill. Perr. t. 31.; P. bimaculatus *Sparr.* Mus. Carls. t. 30.

13. P. *modestus,* Fr. Proc. Z. S. 1845. p.

14. P. *barbatus* (Gmel.) Wagl. — Psittacus pondicerianus var.

15. P. *Barrabandi* (Swains.) Vigors & Horsf. Zool. Ill. pl. 59., Nat. Libr. Parr. pl. 1. — Type of Polytelis *Wagl.* (1830).

Melopsittacus *Gould.**

Bill moderate, with the culmen arched, and the lateral margins curved to the tip, near which the latter are furnished with several minute dentations; the nostrils basal, lateral, oval, and placed in a broad swollen cere, which reaches to the gape. *Wings* moderate, with the second quill the longest. *Tail* long, and much graduated. *Tarsi* moderate, and covered with minute scales. *Toes* moderate, very slender, with the outer anterior toe much the longest; the claws rather long, slender, curved, and very acute.

The type of this genus is exclusively, remarks Mr. Gould, an inhabitant of the vast inland plains of Australia, where it appears to migrate from place to place, in large flocks, in search of the seeds of various kinds of grasses, which constitute its chief food. Its flight is very rapid, but during the heat of the day it lies concealed among the leaves of the lofty trees. The female lays from three to four eggs in the holes of trees, without forming a nest.

M. *undulatus* (Shaw), Gould, Shaw, Nat. Misc. pl. 673., Gould, B. of Austr. pl., Nat. Libr. Parr. pl. 28.

Euphema *Wagl.*†

Bill short, with the culmen rounded and arched to the tip, which is acute and dentated; the nostrils basal, lateral, rounded, and placed in a short rounded cere near the culmen. *Wings* long, with the first, second, and third quills the longest. *Tail* long and graduated, with the ends slightly narrowed and rounded. *Tarsi* short, and covered with small scales. *Toes* moderate, very slender, with the outer anterior toe much the longest; the claws rather long, slender, curved, and very acute.

All the species of this genus are found in Australia. They are usually observed migrating to places that are favourable for the growth of various kinds of grasses, upon the seeds of which they chiefly subsist. They live on the ground, where they run and pass among the various plants with the greatest ease and activity. When disturbed they generally seek safety by a rapid flight for a short distance to the nearest trees, and remain perched until the cause of their alarm has disappeared. The eggs are usually deposited in the holes of decayed trees; they are generally from five to six in number.

* It was in 1840 that Mr. Gould proposed this genus.

† Established by Wagler in 1830 (*Abhandl. Akad. München,* 1832, p. 492.).

1. E. *pulchella* (Shaw), Wagl. Shaw, Nat. Misc. pl. 96., Swains. Zool. Ill. pl. 73. — Psittacus chrysogaster *Lath.* Le Vaill. Perr. t. 68., P. Edwardsii *Bechst.*; Lathamus azûreus *Less.* Gould, B. of Austr. pl.

2. E. *chrysostoma* (Kuhl), Wagl. Consp. Psitt. p. 50. t. 1. — Psittacus venustus *Temm.* Gould, Syn. B. of Austr. pl. f. (head), B. of Austr. pl., Nat. Libr. Parr. pl. 27.

3. E. *discolor* (Shaw), Wagl. White, Journ. pl. p. 263., Swains. Zool. Illustr. pl. 62., Le Vaill. Perr. t. 50. — Psittacus humeralis *Bechst.*; P. Banksianus *Vieill.*; P. australis *Kuhl*; P. Lathamii *Bechst.* Le Vaill. Perr. t. 62.; Lathamus rubrifrons *Less.* Gould, B. of Austr. pl.

4. E. *splendida* Gould, Proc. Z. S. 1840. 147., B. of Austr. pl.

5. E. *aurantia* Gould, Proc. Z. S. 1840. 148., B. of Austr. pl.

6. E. *petrophila* Gould, Proc. Z. S. 1840. 148., B. of Austr. pl.

7. E. *elegans* Gould, Proc. Z. S. 1837. 25., Gould, Syn. B. of Austr. pl. f. 2. (head), B. of Austr. pl.

8. E. *Bourkii* Gould, Mitch. Austr. Exped. i. p. xviii., Gould, B. of Austr. pl.

Trichoglossus *Vig. & Horsf.**

Bill moderate and slender, with the culmen arched to the tip, which is lengthened and hooked, the sides much compressed, and the lateral margins entire; the lower mandible longer than deep, with the gonys long and advancing upwards; the nostrils basal, lateral, oval, and placed in a narrow cere. *Wings* moderate, with the first, second, and third quills nearly equal and longest, the first usually the longest of all. *Tail* rather long and graduated, with the ends narrowed and rather pointed. *Tarsi* very short, robust, covered with small scales, and partly hidden by the feathers of the thighs. *Toes* rather strong and very broad, the claws strong, arched, and acute. The tongue is furnished at the end with numerous strong hairs or bristles of a brush-like structure.

The richly coloured species of this genus are found in Australia, and in some of the islands of the Indian archipelago. Those that are found in the former country appear to live in large societies, moving from place to place in search of the flowers of the various species of gum trees, or *Eucalypti*, which furnish them with an abundant supply of food, and they are exclusively confined to the forests that are composed of those trees. They select the newly expanded flowers, as these afford them the greatest supply of nectar and pollen, which form the chief portion of their subsistence. The eggs are deposited in the holes of trees; they are generally two in number.

1. T. *hæmatodus* (Linn.) Edwards's Birds, pl. 232., Le Vaill. Perr. t. 47. — Psittacus capistratus *Bechst.*

2. T. *rubritorquis* Vig. & Horsf. Trans. Linn. Soc. xv. 291., Lear's Parr. pl. 34., Gould, B. of Austr. pl.

3. T. *multicolor* (Gmel.) Pl. enl. 743., Le Vaill. Perr. t. 24. — Psittacus hæmatodus var. β et var. γ *Gmel.*; P. semicollaris *Lath.* Philip, Bot. Bay, pl. p. 152., White, Journ. pl. p. 140.; P. cyanogaster *Shaw*; P. hæmatodus *Kuhl*; Trichoglossus hæmatodus *Vig. & Horsf.*; T. Swainsoni *Jard. & Selby*, Ill. Orn. pl. 112., Gould, B. of Austr. pl.; Australasia novæ hollandiæ *Less.* Nat. Libr. Parr. pl. 20.

4. T. *cyanogrammus* Wagl. Pl. enl. 61., Le Vaill. Perr. t. 25. 27. — Psittaca amboinensis varia *Briss.* Orn. iv. p. 364., Jard. & Selby, Ill. Orn. pl. iii.

5. T. *chlorolepidotus* (Kuhl), Consp. Psitt. p. 48.—Trichoglossus Matoni *Vig. & Horsf.* Jard. & Selby, Ill. Orn. pl. 110., Gould, B. of Austr. pl., Lear's Parr. pl. 35.

6. T. *ornatus* (Gmel.) Le Vaill. Perr. t. 52. — Australasia malaisiæ *Less.*

7. T. *pusillus* (Shaw), Vig. & Horsf., White, Journ. pl. p. 262., Le Vaill. Perr. t. 124., Gould, B. of Austr. pl.

8. T. *australis* (Lath.) Wagl. — Psittacus concinnus *Shaw*, Nat. Misc. pl. 87., Le Vaill. Perr. t. 48.; P. rubrifrons *Bechst.*; P. pacificus *Shaw*; P. velatus *Vieill.* Jard. & Selby, Ill. Orn. pl. 34., Gould, B. of Austr. pl.

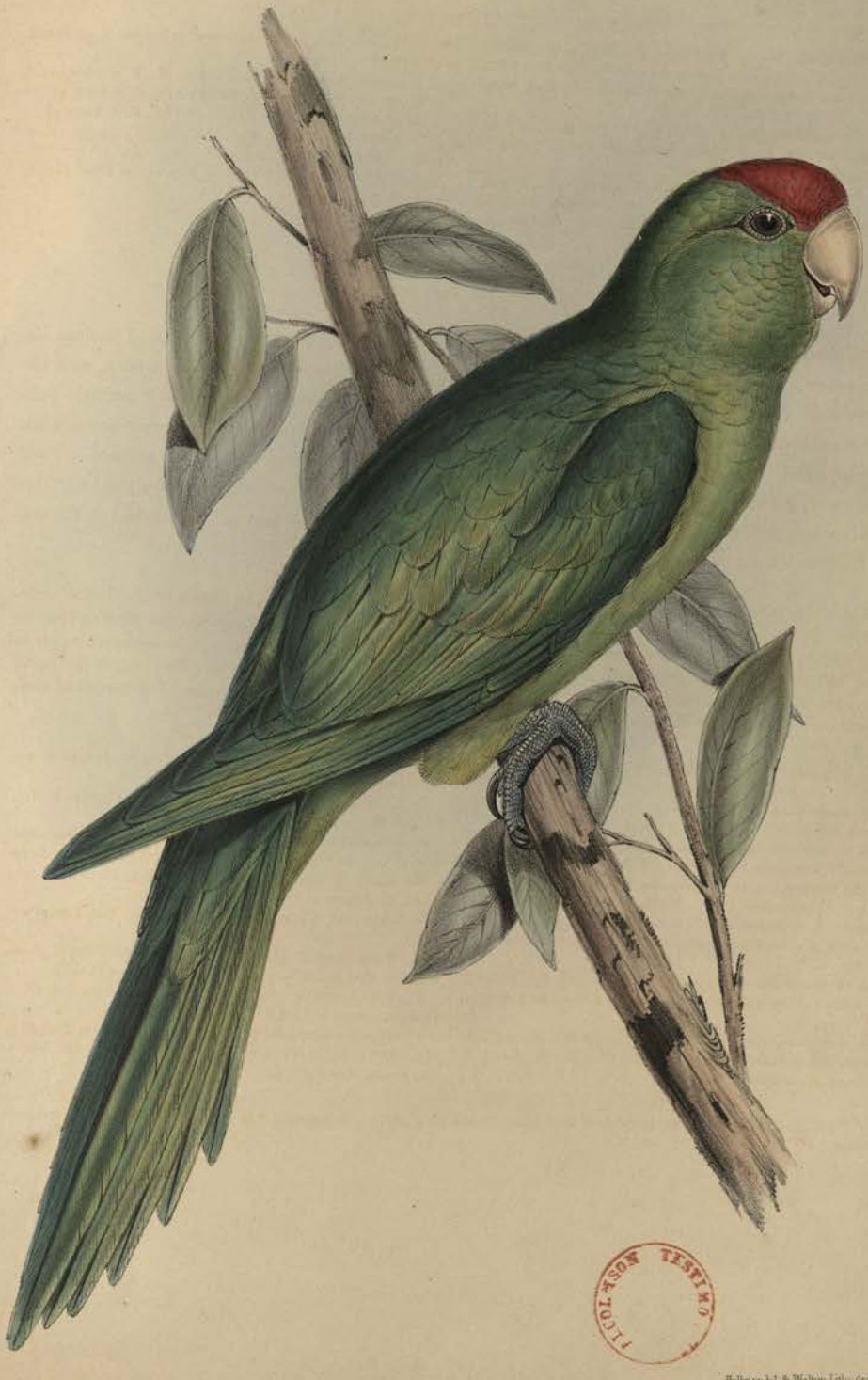
9. T. *versicolor* Vigors, Lear's Parr. pl. 36., Nat. Libr. Parr. pl. 21.

10. T. *pyrrhopterus* (Lath.) Zool. Journ. 1825. Suppl. pl. 4., Nat. Libr. Parr. pl. 22. — Type of Brotogeris *Vigors* (1826).

11. T. *palmarum* (Forst.) Desc. Anim. p. 259., Icon. ined. 48. — Psittacus peregrinus *Lath.* ?

12. T. *porphyreocephalus* Diet. — Psittacus purpureus *Diet.* Phil. Mag. 1832. p. 387.; Psittacula Florentis *Bourj. de St. Hil.* Perr. t. 84., Gould, B. of Austr. pl.

* Established by Vigors and Dr. Horsfield in 1826 (*Linn. Trans.* xv. p. 287.). *Australasia* of M. Lesson is synonymous. It embraces *Brotogeris* of Vigors (1826).



H.C.Richter del. Hullmandel & Walton Lithographers

CONURUS
Waglari. G.R.Gray.

1. CONURUS aeruginosus. 2. ERICOGNATHUS leptorhynchus. 3. ARA ararauna.

The second Subfamily,

ARAINÆ, or MACCAWS,

have the Bill large; the culmen of the upper mandible much arched to the tip, which is prolonged and acute; the lower mandible deeper than long, and rather broader at the base than the upper, with the gonys advancing upwards, and rounded; the Tail lengthened, graduated, and the tip of each feather narrowed.

ARA *Briss.**

Bill very large, compressed on the sides, with the culmen much arched to the tip, which is prolonged and acute; the base of the lower mandible broad, slightly compressed towards the gonys, which is rounded, and sometimes angulated on the sides; the nostrils basal, lateral, and concealed by the frontal plumes. *Wings* long and pointed, with the second and third quills the longest. *Tail* lengthened, graduated, and each feather narrowed towards its end. *Tarsi* short, robust, and covered with small scales. *Toes* unequal, the anterior outer toe rather longer than the posterior outer one. The sides of the head more or less denuded of feathers.

The tropical parts of South America are the peculiar localities of these showy birds. They generally perch on the highest parts of the loftiest trees, preferring those that border the forests, and yet seldom show themselves at the very extremity of the branches. It is most usual to observe them in pairs, though at times they are seen in small parties of six or eight individuals together. When disturbed, they shake themselves, and utter a scream, which is piercing, strong, and disagreeable. They are rarely noticed on the ground, but commonly climb from branch to branch in quest of the fruits of forest trees, and also those of the palms, in which they usually live. Their flight is horizontal, and not very elevated. The eggs, which are usually two in number, are deposited in the hollow trunks of trees, or on the large branches near the trunk.

1. A. *ararauna* (Linn.) Kuhl, Edwards's Birds, pl. 159., Pl. enl. 36., Le Vaill. Perr. t. 3., Lear's Parr. pl. 8.
2. A. *canindè* (Wagl.) Kuhl, Azara No. 262.
3. A. *aracanga* (Gmel.) Kuhl, Edwards's Birds, pl. 158., Pl. enl. 12., Le Vaill. Perr. t. 2. 2 bis, Lear's Parr. pl. 7.
4. A. *macao* (Linn.) Kuhl, Le Vaill. Perr. t. 1., Azara No. 280.
5. A. *tricolor* (Bechst.) Kuhl, Pl. enl. 641., Le Vaill. Perr. t. 5.
6. A. *militaris* (Linn.) Kuhl, Edwards's Birds, pl. 313., Le Vaill. Perr. t. 4. 6. — Psittacus ambiguus *Bechst.*
7. A. *pachyrhyncha* (Swains.) Phil. Mag. 1827. p. 439. — Psittacus Pacha *Wagl.*
8. A. *severa* (Linn.) Edwards's Birds, pl. 229., Pl. enl. 383., Le Vaill. Perr. t. 8, 9. 16.
9. A. *makawuanna* (Gmel.) Pl. enl. 864., Le Vaill. Perr. t. 7.
10. A. *maracana* (Vieill.) N. Dict. Hist. Nat. ii. 260. — Psittacus Illigeri *Kuhl*; Arara purpureo-dorsalis *Spix*, Av. Bras. t. 24.; Psittacus fuscatus *Illig.*
11. A. *hyacinthina* (Lath.) Gal. des Ois. t. 24., Lear's Parr. pl. 9. — Psittacus augustus *Shaw*, Mus. Lev. pl. p. 59.; Anodorhynchus Maximiliani *Spix*, Av. Bras. t. 11.; Type of Anodorhynchus of Spix (1824).
12. A. *glauca* (Vieill.) N. Dict. Hist. Nat. ii. 259., Abhandl. Akad. München. 1832. t. 26.
13. A. *Spixii* (Wagl.) — Arara hyacinthinus *Spix*, Av. Bras. t. 23.

* Established by Brisson (*Ornithologie*) in 1760. It embraces *Anodorhynchus* of Spix (1825).

Conurus *Kuhl.**

Bill moderate; the sides compressed, with the culmen arched to the tip, which is rather long and acute; the lower mandible deeper than long, very broad at the base, and the gonys advancing upwards and rounded in front; the nostrils basal, lateral, and generally concealed by the frontal plumes. *Wings* long and pointed, with the first three quills the longest. *Tail* lengthened, graduated, and the end of each feather narrowed. *Tarsi* very short, and covered with small scales. *Toes* long, unequal; the anterior outer toe rather longer than the posterior outer one. The orbits only naked.

These birds are scattered throughout the continent of America. They are usually found in flocks in the inundated forests, or those that border the great rivers, preferring the upper branches of the loftiest trees. When pressed with hunger, they descend to the banks of the rivers or the neighbouring fields, seeking the various kinds of berries and fruits; at times they frequent the cultivated land and orchards, committing great ravages among the grain, maize, and fruits, at the same time strewing large quantities about on the ground untasted. While the flock is thus engaged, a sentinel watches, and gives the alarm on the approach of an enemy. They are naturally noisy, and their cry is sharp and very disagreeable. Their flight is swift and graceful, and they generally climb from branch to branch by means of their bill and feet. When at rest, they either sit on the branches or conceal themselves in the hollows of the trunks of trees, especially in the heat of the day. The nest is formed in a hollow of a decayed tree; merely depositing the eggs on the bare wood, to the number of two to four, and several females laying their eggs in the same cavity. Some species make holes in the precipices near rivers several feet in length, where they form their nests, and deposit their eggs. Others construct their nests on trees, composing them of a great quantity of spinous branches placed in a globose form, of as much as three feet and a half in diameter, with the entrance on the side. It is usual for a number of nests to be placed side by side on the same tree.

1. C. *acuticaudatus* (Vieill.) N. Dict. Hist. Nat. ii. 369., Azara No. 278. — Aratinga hæmorrhous *Spix*, Av. Bras. t. 13.

2. C. *nobilis* (Linn.) Kuhl. — Psittacus guianensis *Kuhl*; Ps. cumanensis *Licht.*; Arara macrognathus *Spix*, Av. Bras. t. 25. f. 1, 2.; Psittacara frontata *Vigors*.

3. C. *pavua* (Bodd.) Kuhl, Pl. enl. 167. 407., Le Vaill. Perr. t. 14, 15., Azara No. 257. — Psittacus guianensis *Gmel.*

4. C. *Wagleri* G. R. Gray.

5. C. *cyanolyseos* (Mol.) Lear's Parr. pl. 10.—Psittacus patagonus *Vieill.* Azara 276., Voy. de la Coqu. Ois. t. 35. bis; Psittacus (Aratinga) Byroni *Childr.* Gray, Zool. Misc. p. 12.

6. C. *flaviventris* (Wagl.) Azara No. 276.

7. C. *luteus* (Bodd.) — Psittacus Guarouba *Gmel.*; Aratinga Carolinæ Augustæ *Spix*, Av. Bras. t. 12., Pl. enl. 525., Le Vaill. Perr. 20.; Psittacus chloropterus *Vieill.*

8. C. *carolinensis* (Linn.) Kuhl, Pl. enl. 499. — Psittacus ludovicianus *Gmel.* Wils. Amer. Orn. pl. 26. f. 1., Le Vaill. Perr. t. 33.; Ps. lutei-capillus *Vieill.*

9. C. *solstitialis* (Linn.) Kuhl. — Psittacus aurantius *Mill.* Cimel. Phys. pl. 4.; Ps. merulinus *Scop.*; Ps. guarouba var. *Gmel.*; Ps. luteus *Vieill.* Spix, Av. Bras. t. 14. a., Le Vaill. Perr. t. 18.

10. C. *jendaya* (Gmel.) — Aratinga chrysocephalus *Spix*, Av. Bras. t. 12.; Psittacus pyrrhocephalus *Hahn.* Ausl. Vög. Lief. 14. t. 1.; Ps. auricapillus *Illig.*; Aratinga aurifrons *Spix*, Av. Bras. t. 16. f. 1, 2.

11. C. *pertinax* (Linn.) Kuhl, Edwards's Birds, pl. 234. — Psittaca illiniaca *Briss.* Pl. enl. 528., Le Vaill. Perr. t. 34, 35, 36.; Psittacus inornatus *Kuhl.*

12. C. *æruginosus* (Linn.) Kuhl, Edwards's Birds, pl. 177. — Psittacus cactorum *Pr. Max.*; Ps. plumbeus *Gmel.*; Aratinga flaviventer *Spix*, Av. Bras. t. 18. f. 1.; Ar. minus *Spix*, t. 19. f. 2.

13. C. *Petzii* (Leibl.) Abhandl. Akad. München, 1832. 650.

14. C. *aureus* (Gmel.) Kuhl, Edwards's Birds, pl. 235. — Psittacus brasiliensis *Lath.* Pl. enl. 338.; Ps. regulus *Shaw*, Le Vaill. Perr. t. 41. 37., Azara No. 280., Donov. Nat. Rep. pl. 72.

15. C. *cruentatus* (Pr. Max.) Reise n. Bras. 1. 72., Temm. Pl. col. 338. — Psittacus erythrogaster *Licht.*; Ps. squamosus *Kuhl*, non Lath.; Aratinga cyanogularis *Spix*, Av. Bras. t. 17.; Psittacara Lichtensteinii *Vigors*; P. Vigorsii *Desm.*

16. C. *melanurus* (Spix), Av. Bras. t. 22. f. 1, 2.

17. C. *cyanopterus* (Bodd.) Pl. enl. 144. — Psittacus Anaca, et P. versicolor *Gmel.* Le Vaill. Perr. t. 16.; P. maculatus *Donov.* Nat. Rep. pl. 33.

18. ? C. *squamata* (Lath.).

19. C. *nenday* (Wagl.) Azara No. 279. — Psittacus melanocephalus *Vieill.*

20. C. *chiripepè* (Vieill.) N. Dict. Hist. Nat. 2. 361., Azara No. 281.

21. C. *chlorogenys* (Wagl.) — Aratinga perlatus, *Spix*, Av. Bras. t. 20. f. 2.

22. C. *lepidus* (Illig.) — Aratinga perlatus ♂ *Spix*, Av. Bras. t. 20. f. 1.

* Established by Kuhl in 1820 (*Monogr. Psittacidæ*), but Brisson in 1760 had previously proposed *Psittaca* for this division, which is too near *Psittacus* of Linnæus to be employed. It includes *Aratinga* of Spix (1824), *Psittacara* of Vigors (1825), and *Sittace* of Wagler (1830).

23. C. *vittatus* (Shaw). — Aratinga fasciatus *Spix*, Av. Bras. t. 21. f. 1, 2.; Psittacus frontalis *Vieill.*; Ps. undulatus *Illig.*

24. C. *leucotis* (Licht.) Kuhl, Consp. Psitt. p. 21. — Aratinga caixana *Spix*, Av. Bras. t. 19. f. 1.

25. C. *monachus* (Bodd.) Kuhl, Pl. enl. 768., Swains. Ill. Zool. pl. 89., Le Vaill. Perr. t. 38. 67. — Psittacus murinus *Gmel.*; Ps. cotorra *Vieill.*; Ps. buccalis *Bechst.*; Ps. cinereicollis *Vieill.*

26. C. *euops* (Wagl.) Abhandl. Akad. München, 1832. 638. t. 26. f. 2.

27. C. *Tiriacula* (Bodd.) Pl. enl. 837. — Psittacus tirica *Gmel.*; Ps. rufirostris *Illig.*; Ps. viridissimus *Kuhl;* Aratinga acutirostris *Spix*, Av. Bras. t. 15. f. 1.

28. C. *virescens* (Gmel.) Kuhl, Pl. enl. 359., Le Vaill. Perr. t. 57., Azara No. 283. — Psittacus chiriri *Vieill.*

29. C. *xanthopterus* (Spix), Av. Bras. t. 15. f. 2. — Psittacus xanthopterygius *Spix*, Av. Bras. t. 34. f. 1.

30. C. *Tui* (Gmel.) Pl. enl. 456. f. 1., Le Vaill. Perr. t. 70.

31. C. *Tuipara* (Linn.) Edwards's Birds, pl. 293. f. 2. — Psittacus chrysopterus *Linn.* Le Vaill. Perr. t. 58.; Ps. sosove *Bechst.*; Ps. calthopticus *Vieill.*; Ps. cayanensis *Swains.* Zool. Illustr. t. 1., Pl. enl. 190. f. 1., Le Vaill. Perr. t. 59.; Ps. toui *Shaw.*

32. C. *nanus* (Vigors), Zool. Journ. 1830. 272., Lear's Parr. pl. 12.

33. C. ? *nigricollis* (Lath.).

34. ? C. *jaguilma* (Mol.) Hist. Nat. Chili, p. 228.

35. C. *erythrofrons* Less. Rev. Zool. 1842. 135.

36. C. *eburnirostrum* Less. Rev. Zool. 1842. 135.

37. C. *chrysophrys* Swains. Two Cent. and a Quart. p. 320.

38. C. *mitratus* Tschudi, Faun. Peruana, p. 44.

39. C. *rupicola* Tschudi, Faun. Peruana, p. 44.

40. C. *calito* (Jard. & Selby), Ill. Ornith. pl. 82.

41. C. *aurifrons* (Less.) Cent. Zool. t. 18. — Conurus sitophagus *Tschudi*, Fauna Peruana, p. 44. ?

42. C. *smaragdinus* (Gmel.) Pl. enl. 85.

43. ? C. *canicollis* (Wagl.) — Psittacus murinus *Swains.* Zool. Ill. pl. 89.

Enicognathus.*

Bill lengthened, very slender, the sides compressed, and the culmen slightly curved to the tip, which is much prolonged and acute; the lower mandible longer than deep, and the gonys gradually curved upwards; the nostrils basal, lateral, and hidden by the plumes. *Wings* lengthened and pointed, with the second and third quills the longest. *Tail* long, graduated, with the ends of the feathers pointed and rather rigid. *Tarsi* very short, and covered with small scales. *Toes* unequal, rather slender, with the anterior outer toe rather longer than the posterior outer toe.

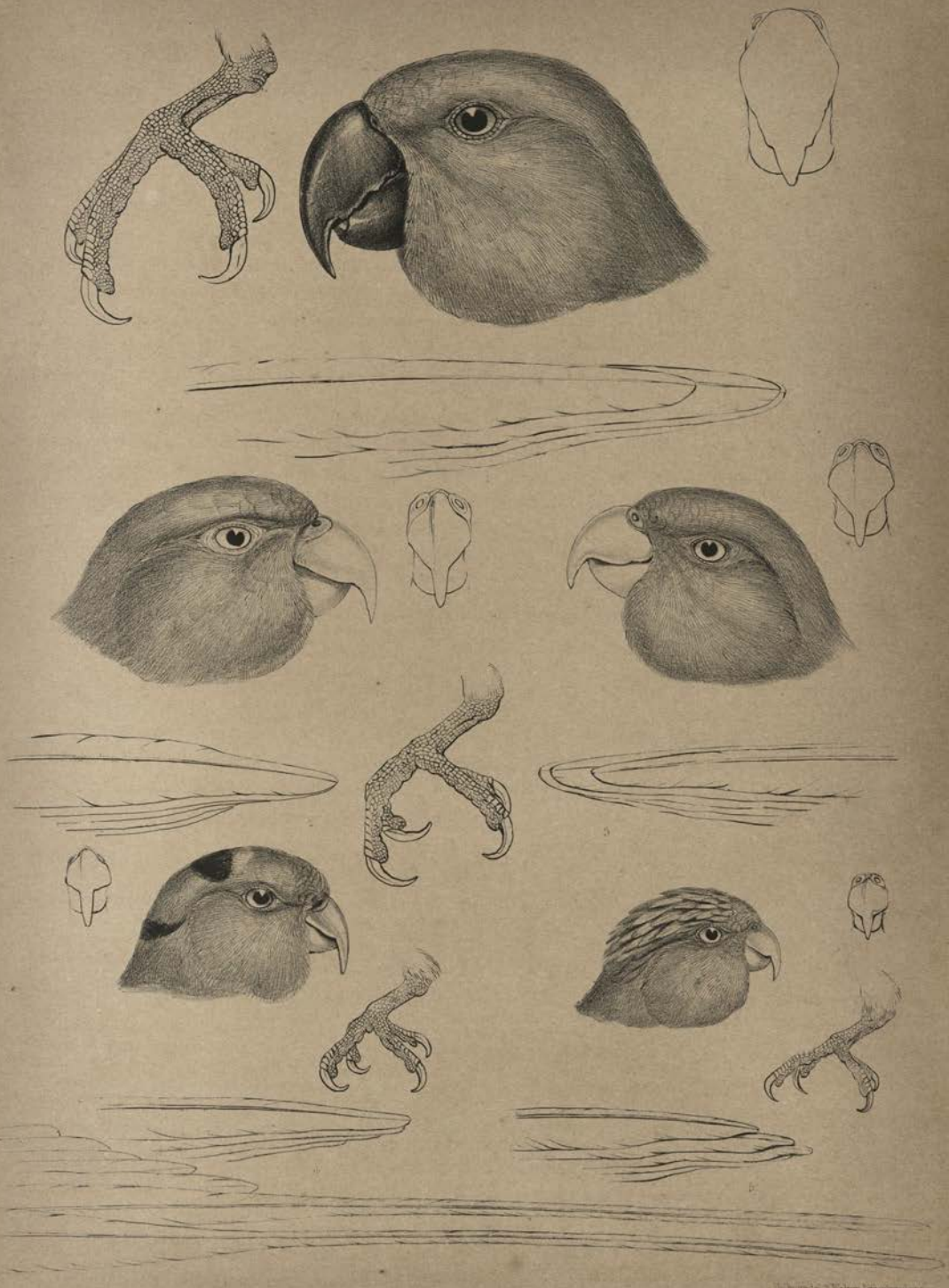
This bird inhabits Chili; its habits and manners are unknown.

E. *leptorhynchus* (King), Lear's Parr. pl. 11. — Psittacus rectirostra *Meyen*, Nov. Act. Acad. Nat. Cur. Bonæ, 1834. t. xv.; Leptorhynchus ruficaudus *Swains.*; P. cheroyeus *Mol.* ?

* This genus was originally proposed by Mr. Swainson, under the name of *Leptorhynchus*, in 1837. This word having been priorly employed by M. Menetriès, I in 1840 changed it to the above.

C. Hullmandel's Patent Lithotint.

EOS
cyanostriata G.R.Gray.



1. ECLECTUS Linnæ 2. LORIUS garrulus 3. EOS rubra 4. CHARMOSYNA papuensis 5. CORYPHILUS papilans

The third Subfamily,

LORINÆ, or LORIES,

have the Bill large and slender, with the culmen curved to the tip, which is prolonged and pointed, the lateral margin sometimes sinuated and slightly notched; and the gonys of the lower mandible lengthened, and more or less curved and advancing upwards.

CHARMOSYNA *Wagl.**

Bill slender, higher than broad, with the culmen arched to the tip, which is prolonged and acute; the gonys very long, curved, and rounded; and the nostrils placed in the cere, with the opening rounded. *Wings* long and pointed, with the first, second, and third quills nearly equal and longest. *Tail* much lengthened and cuneated, especially the two middle feathers. *Tarsi* very short, and covered with small scales. *Toes* long, unequal, the two outer ones of equal length.

The type of this genus is peculiar to New Guinea: its habits and manners are unknown.

C. *papua* (Scop.) Sonn. Voy. t. 111.—Psittacus papuensis *Gmel.*; P. japonicus, P. Bontii *Lath.*; P. javanicus *Gmel.*; P. omnicolor *Licht.*; P. Lichtensteinii *Bechst.* Le Vaill. Perr. t. 77.

LORIUS *Briss.*†

Bill large, higher than broad; the culmen arched to the tip, which is lengthened and acute; the sides compressed; the gonys lengthened, nearly straight, advancing upwards, with the lateral margins nearly straight; and the nostrils placed in the cere, with the opening small, rounded, and exposed. *Wings* moderate and pointed, with the second and third quills the longest. *Tail* moderate, rounded, and the feathers broad and rounded at the ends. *Tarsi* short, strong, and covered with small scales. *Toes* long, unequal, mostly covered with quadrate scales, and the tip of each toe with transverse scales; the claws long, arched, and acute.

These showy birds are found in the Moluccas, New Guinea, and Borneo. Forster informs us that when angry they make a noise like a beaver, and cry with a shrill voice, inflating their throat at the same time.

1. L. *domicella* (Linn.) Edwards's Birds, pl. 171., Pl. enl. 119. — Psittacus domicella *Linn.* Le Vaill. Perr. 95., Pl. enl. 84. 119., Le Vaill. Perr. t. 94.; P. raja *Shaw*; P. rex *Bechst.*; P. radhea *Vieill.* Lear's Parr. pl. 37.
2. L. *tricolor* Steph. Edwards's Birds, pl. 170., Pl. enl. 168., Le Vaill. Perr. t. 123, 124. — Psittacus Lory *Linn.*
3. L. *cardinalis* (Bodd.) Pl. enl. 518. — Psittacus puniceus *Gm.*
4. L. *cæruleatus* (Bechst.) Le Vaill. Perr. t. 97. — Psittacus cyanurus *Shaw.*
5. L. *garrulus* (Linn.) Edwards's Birds, pl. 172., Pl. enl. 216. — Psittacus moluccensis *Briss.*, Le Vaill. Perr. t. 96., Swains. Zool. Illustr. n. s. pl.; Psittacus auroræ *Linn.*
6. L. *superbus* Fr. Proc. Z. S. 1845.

* Established by Wagler in 1830 (*Abhandl. Akad. München*, 1832, p. 493.). *Psittapous* of M. Lesson (1831) and *Pyrrhodes* of Mr. Swainson (1837) are synonymous.

† Brisson established this division in 1760. Wagler's genus *Domicella* (1830) is coequal with the one employed.

Eos *Wagl.**

Bill large, higher than broad; the culmen arched to the tip, which is long and acute; the sides compressed; the gonys long, rounded, and curved upwards, with the lateral margins sinuated; the nostrils basal, lateral, and oval. *Wings* long, with the first three quills the longest, and nearly equal. *Tail* lengthened and wedge-shaped, with the feathers narrowed, especially at the ends. *Tarsi* short and covered with small scales. *Toes* moderate, unequal, mostly covered with square scales, and the tip of each toe with transverse scales; the claws long, arched, and acute.

The gay-plumaged birds that compose this genus are found in the various islands of the Indian Archipelago and New Guinea. They principally subsist on the soft fruits that grow in the forests.

1. E. *indica* (Gmel.) Wagl. Pl. enl. 143. — Psittacus coccineus *Lath.* Le Vaill. Perr. t. 53.
2. E. *rubra* (Gmel.) Wagl. Pl. enl. 519. — Psittacus cæruleatus *Shaw*, Nat. Misc. pl. 937., Le Vaill. Perr. t. 93.; P. cyanonotus *Vieill.* Edwards's Birds, pl. 173.; P. borneus *Lath.* Le Vaill. Perr. t. 44.
3. E. *squamata* (Bodd.) Pl. enl. 684. — Psittacus guebiensis *Scop.* Le Vaill. Perr. t. 51.; Psittacus squameus *Shaw.*
4. E. *cochinsinensis* (Lath.) Wagl. Le Vaill. Perr. t. 54. — Psittacus riciniatus *Bechst.*; P. cucullatus *Shaw.*
5. E. *variegata* (Gmel.) Wagl.
6. E. *Isidorii* (Swains.) Zool. Ill. n. s. pl.
7. E. *cervicalis* (Lath.) Wagl. Le Vaill. Perr. 136. — Psittacus nuchalis *Shaw*, Misc. pl. 913.; P. Langloisi *Vieill.*; P. lunatus *Bechst.* Abbild. Naturh. Gegenst. t. 94.
8. E. *ornata* (Gmel.) Wagl. Edwards's Birds, t. 174., Pl. enl. 552.
9. E. *cyanostriata* G. R. Gray.— Lorius borneus *Less.* Tr. d'Orn. p. 192.
10. E. *scintillata* (Temm.) Pl. col. 569.

Coriphilus *Wagl.**

Bill slender, with the culmen much arched to the tip, which is lengthened and acute; the sides compressed, with the lateral margins sinuated; the gonys straight, compressed, and advancing upwards; and the nostrils basal, lateral, and rounded. *Wings* long, with the first three quills nearly equal and longest. *Tail* rather lengthened and graduated, with the feathers broad and the ends narrowed. *Tarsi* moderate, strong, and covered with very small scales. *Toes* rather short, thick, the outer two equal in length; the base of all covered with small scales, and the tips with transverse scales.

These birds inhabit the islands of the South Pacific Ocean, where they live principally on the fruit of the banana: they have a hissing and whistling voice. The nest is usually built among the highest leaves of the cocoa-nut palm.

1. C. *notatus* (Bodd.) — Psittacus taitianus *Gmel.* Pl. enl. 455. f. 2.; Psittacus saphirinus *Forst.* Desc. Anim. Icon. ined. 49.; P. porphyrio *Shaw*, Nat. Misc. pl. 7., Le Vaill. Perr. t. 65.; Lorius vini *Less.*
2. ? C. *cyaneus* (Sparrm.) Wagl. Mus. Carls. t. 27., Le Vaill. Perr. t. 66. — Psittacus Sparrmanni *Bechst.*
3. C. *pipilans* (Lath.) — Psittacus euchlorus *Forst.*; P. fringillaceus *Gmel.*; P. australis *Gmel.*; P. porphyreocephalus *Shaw*, Nat. Misc. pl. 1., Le Vaill. Perr. t. 71.
4. C. *solitarius* (Lath.) Wagl. Le Vaill. Perr. t. 64. — Psittacus phigy *Bechst.*; P. Le Vaillantii *Shaw*, Nat. Misc. pl. 109.; P. coccineus *Shaw.*
5. C. *Kuhlii* (Vigors), Wagl. Zool. Journ. 1824. pl. 16.
6. C. *Dryas* Gould, Proc. Z. S. 1842. 165., Voy. Sulph. Birds, pl.
7. C. *placentis* (Temm.) Pl. col. 553.
8. C. *Euteles* (Temm.) Pl. col. 568.
9. C. *Iris* (Temm.) Pl. col. 567.

* Established by Wagler in 1830 (*Abhandl. Akad. München*, 1832, p. 494.).
† Established by Wagler in the *Abhandl. Akad. München*, 1832, p. 494.

Eclectus.*

Bill large, strong, much higher than broad, with the culmen arched and compressed, and the sides sloping to the lateral margins which are dentated, the under mandible rather compressed, the gonys curved upwards, broad, and keeled in the middle, and the lateral margins sinuated ; the nostrils basal, small, and covered by the plumes. *Wings* long and pointed. *Tail* moderate, nearly equal, and broad at the end. *Tarsi* very short, stout, and rather depressed. *Toes* unequal and long, with the two outer ones equal in length, and all covered with small scales, and the tips with transverse scales.

These birds are found in nearly all the islands of the Indian Archipelago, from Sumatra to the Moluccas, and New Guinea.

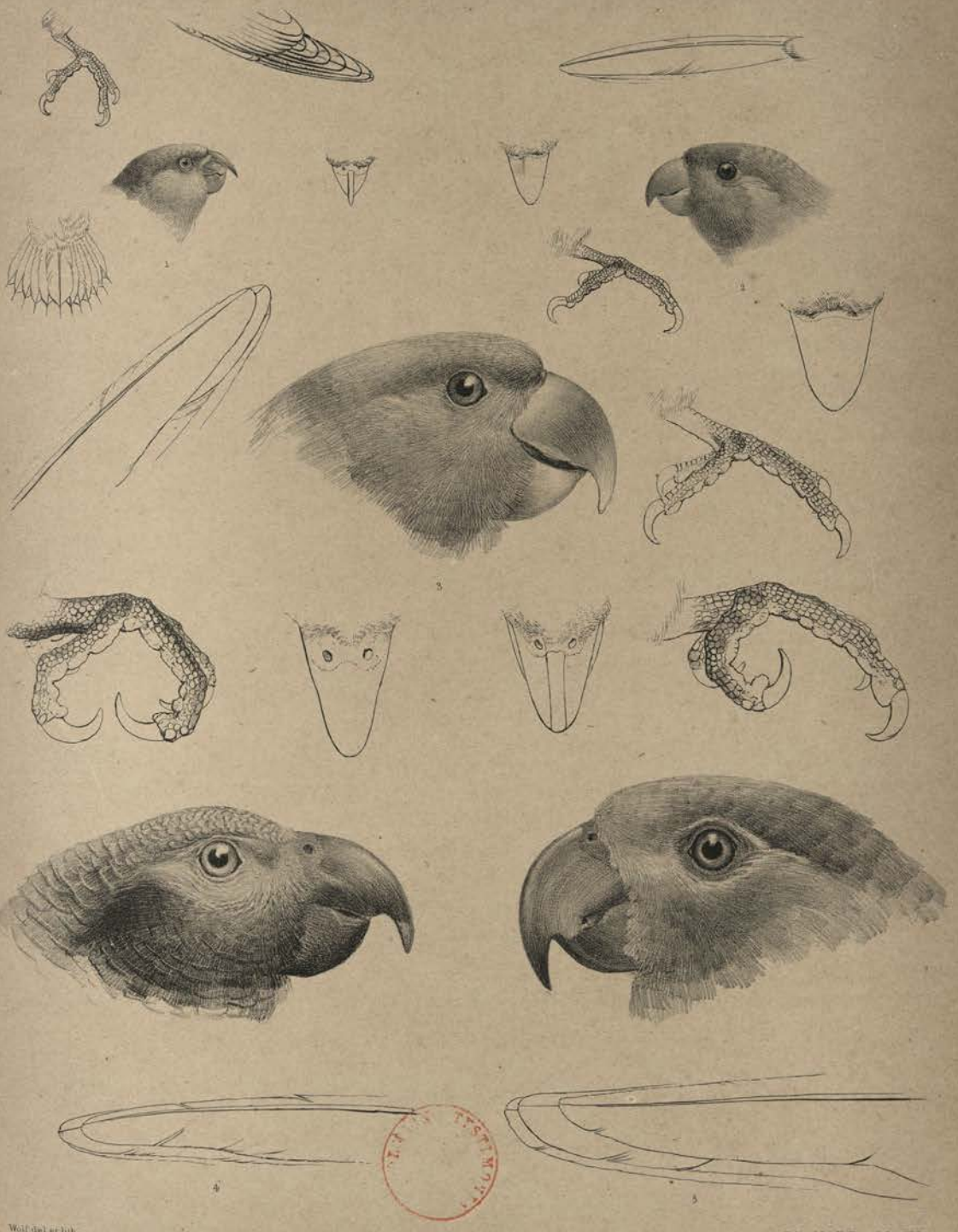
1. E. *Linnæi* Wagl. Monogr. Psitt. (t. xxii. ?)
2. E. *ceylonensis* (Bodd.) Brown, Ill. Zool. pl. 6. — Psittacus grandis *Gmel.* Pl. enl. 683., Le Vaill. Perr. t. 126, 127, 128. ; Psittacus janthinus *Gmel.* ; P. guebiensis var. *Lath.*
3. E. *paragua* (Gmel.) — Psittacus Stavorini *Less.*; Type of Psittacodis *Wagl.* (1830).
4. E. *polychloros* (Scop.) Edwards's Birds, t. 231., Pl. enl. 514. — Psittacus magnus et P. sinensis *Gmel.* ; P. viridis *Lath.* Le Vaill. Perr. t. 132. ; P. lateralis *Shaw* ; Muscarinus prasinus *Less.*
5. E. *sumatranus* (Raffl.) Trans. Linn. Soc. xiii. 281.
6. E. *gramineus* (Gmel.) Pl. enl. 862., Le Vaill. Perr. t. 121.
7. E. *tarabe* (Gmel.).

* Wagler established this genus in 1830 (*Abhandl. Akad. München*, 1832, p. 495.). I include in it *Psittacodis* of the same author.

October, 1845.

From life by E.Lear. In Lithotint by D.M.

PSITTACUS
augustus. Vig.



Wolf del et lith

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1. NASITERNA pygmæa. 2. PSITTACULA pullaria. 3. TANYGNATHUS macrorhynchus. 4. PSITTACUS erythacus. 5. CHRYSOTIS Duffresnianus.

The fourth Subfamily,

PSITTACINÆ, or PARROTS,

have the Bill more or less large, broad at base, and the sides compressed, with the culmen much arched to the tip, which is acute and prolonged; the lateral margins dentated or festooned; the nostrils basal, lateral, and rounded; the Wings more or less long, and pointed; the Tail usually short and squared; the Tarsi short, and covered with small scales; the Toes moderate.

TANYGNATHUS *Wagl.**

Bill very large and swollen, with the culmen arched and acute, and the lateral margin not dentated; the gonys long, advancing upwards, and keeled in the middle; the nostrils basal, lateral, and rounded. *Wings* long and pointed, with the second and third quills nearly equal and longest. *Tail* very long, rather broad, and cuneated. *Tarsi* very short, and covered with minute scales. *Toes* long and slender, with the outer anterior toe longer than the posterior one, and all covered with minute scales; the claws moderate, compressed, and slightly curved.

The species are inhabitants of the Molucca Islands and New Guinea.

1. T. *macrorhynchus* (Linn.) Wagl. Pl. enl. 713. — Psittacus nasutus *Lath.*; P. megalorhynchus *Bodd.* Le Vaill. Perr. t. 83.
2. T. *gala* (Bodd.) Sonn. Voy. N. Guin. t. 44., Pl. enl. 287. — Psittacus olivaceus et P. marginatus *Gmel.* Le Vaill. Perr. t. 60.; P. pileatus *Scop.*

PSITTACUS *Linn.*†

Bill large, and rather compressed, with the culmen biangular, and much arched to the tip, near which the lateral margin is strongly emarginated, that of the under mandible much sinuated, and the anterior part sharply edged; the gonys advancing upwards and angular; the nostrils basal and lateral, with the opening small and rounded. *Wings* mostly reaching to the end of the tail, with the first quill nearly as long as the second and third, which are the longest. *Tail* short and even. *Tarsi* very short, and covered with small scales. *Toes* long, the lateral ones equal, and all covered with small scales; the claws short and slightly curved.

The continent of Africa and the warmer parts of South America are the countries of these parrots, which inhabit the forests, or are found on clusters of trees, especially those that grow in the neighbourhood of the rivers, or such as will afford them sufficient protection from the scorching heat of the sun, and serve as roosting-places during the night. On the first appearance of dawn, these birds are in the habit of assembling from their nocturnal retreats in vast flocks, on

* Established by Wagler in 1830 (*Abhandl. Akad. München*, 1832, p. 501.). It is coequal with *Muscarinus* of M. Lesson (1831), and *Erythrostomus* of Mr. Swainson (1837).

† Established by Linnæus in 1725 (*Systema Naturæ*). It embraces *Pionus* of Wagler (1830) and *Poicephalus* of Mr. Swainson (1837), which in 1841 was changed to *Pœocephalus* by Mr. Strickland, as well as *Deroptyus* of Wagler (1830).

one or more dead trees, when they are observed preening their feathers in the early rays of the sun, as if to dry them from the moisture that had settled on them from the dews of the night. They then separate into small parties, and scatter themselves in search of their food, which consists chiefly of various fruits; they sometimes commit great destruction among the orange plantations. After having satisfied their hunger, they invariably proceed to the banks of the rivers to bathe, until the heat of the day drives them to seek the thick foliage of the trees, where they enjoy the refreshing coolness of the shade, and remain so quiet that they are not discovered until disturbed or alarmed for their safety. In such cases, the whole flock fly off with great rapidity to a fresh locality, and at the same time utter loud discordant screams. Towards evening, they leave the shade of the trees for the purpose of obtaining their second daily supply of food, after which all the flocks reassemble with great noise, and renew their visit to the river to perform their second ablution; and, before going to rest, they revisit the trees to preen and dry their plumage by the last rays of the sun. This completed, they separate each to its own peculiar roosting-place, until the dawn of approaching day again awakens them into active life. On the approach of the rainy season, these birds migrate to the warmer districts; during which migration they rise to so great an elevation in the air, that they are not visible to the naked eye, though their discordant notes are distinctly heard. They seek the quiet solitude of the forests for the rearing of their young, whom they feed by disgorging the half-masticated food in the manner of pigeons. The female deposits from two to four eggs on the bare wood in holes of trees.

1. P. *erythacus* Linn. Pl. enl. 311., Le Vaill. Perr. t. 100, 101, 102.
2. P. *guineensis* Mill. Cimel. Phys. pl. 29.
3. P. *senegalus* Linn. Pl. enl. 288., Le Vaill. Perr. t. 116, 117, 118. — Type of Poicephalus *Swains.*
4. P. *Meyeri* Rüpp. Zool. Atl. t. ii.
5. P. *flavifrons* Rüpp. Syst. Uebers. Vög. Nord-Ost-Afr. t. 31.
6. P. *timneh* Fras. Proc. Z. S. 1844.
7. P. *Le Vaillantii* Lath. Le Vaill. Perr. t. 130, 131. — Psittacus robustus *Gmel.*; P. caffer *Licht.*; P. flammiceps *Bechst.*; P. infuscatus *Shaw*; P. fuscicollis *Kuhl.*
8. ? P. *heterolitus* Homb. & Jacq. Ann. des Sci. Nat. 1841. p.
9. P. *menstruus* Pl. enl. 584., Edwards's Birds, pl. 314., Le Vaill. Perr. t. 114. — Type of Pionus *Wagl.* (1830).
10. P. *Maximiliani* Kuhl, Azara No. 287. — Psittacus flavirostris *Spix*, Av. Bras. t. 31.
11. P. *senilis* Spix, Av. Bras. t. 31. f. 1. — Psittacus leucorhynchus *Swains.*
12. P. *violaceus* Bodd. Edwards's Birds, pl. 315., Le Vaill. Perr. t. 115., Pl. enl. 408. — Psittacus purpureus *Gmel.*; P. cyanocephalus *Scop.*
13. P. *chalcopterus* Fras. Proc. Z. S. 1840. p. 59.
14. P. *sordidus* Linn. Edwards's Birds, pl. 167., Le Vaill. Perr. t. 104.
15. P. *melanocephalus* Linn. Edwards's Birds, pl. 169., Pl. enl. 527., Le Vaill. Perr. t. 119, 120. — Psittacus leucogaster *Kuhl.*
16. P. *badiceps* Lear's Parr. pl. 1.
17. P. *Histrio* Bodd. Pl. enl. 744., Le Vaill. Perr. t. 133. — Psittacus pileatus *Gmel.*; P. caica *Lath.*
18. P. *Barrabaudi* Kuhl, Consp. Psitt. p. 61.
19. P. *vulturinus* Illig. Kuhl Consp. p. 62.
20. P. *brachyurus* Kuhl, Consp. Psitt. p. 72. — Psittacus pumilio *Spix*, Av. Bras. t. 29. f. 2.; P. viridissimus *Swains.* Zool. Ill. pl. 155.
21. P. *chrysopogon* Less. Rev. Zool. 1842. p. 135.
22. P. *fuscicapillus* Vieill. N. Dict. d'Hist. Nat. xxv. 316. — Psittacus spadiceocephalus *Kuhl.*
23. P. *agilis* Gmel. Edwards's Birds, pl. 168., Le Vaill. Perr. t. 105. — Psittacus virescens *Bechst.*; P. signatus *Shaw*; P. minor *Vieill.*
24. P. *vittatus* Bodd. Pl. enl. 792., Le Vaill. Perr. t. 108. 108 bis. — Psittacus dominicensis *Gmel.*; P. leucocephalus *Kuhl.*
25. P. *leucocephalus* Linn. Edwards's Birds, pl. 166, Pl. enl. 335. 549., Le Vaill. Perr. t. 107. 107. bis. 109. — Psittacus collarius *Linn.*; P. paradisi *Gmel.* Pl. enl. 336.; P. Gerini *Lath.*
26. P. *albifrons* Sparrm. Mus. Carls. t. 52.
27. P. *Pretrei* Temm. Pl. col. 492.
28. P. *Guildingii* Vigors, Proc. Z. S. 1836. p. 80.
29. P. *mercenarius* Tschudi, Faun. Peruana, p.
30. P. *tumultuosus* Tschudi, Faun. Peruana, p.
31. P. *auro-palliatus* Less. Rev. Zool. 1842. p. 135.
32. P. ? *accipitrinus* Linn. Pl. enl. 526., Spix Av. Bras. t. 32 a. — Type of Deroptyus *Wagl.* (1830).
33. ? P. *cyanauchen* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 107.
34. ? P. *reticulatus* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 108.
35. ? P. *cyanicollis* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 108.
36. ? P. *Mulleri* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 108.

Chrysotis *Swains.**

Bill moderate, with the culmen biangular, flattened, ploughed in the middle, and arched to the tip, near which the lateral margins are strongly emarginated, that of the under mandible more or less

* Established by Mr. Swainson in 1837 (*Class. of Birds*, ii. p. 300.). *Amazona* of M. Lesson (1831) and probably *Androglossus* of Vigors (1825) are synonymous; and it includes *Triclaria* of Wagler (1830).

sinuated near the tip; the gonys broad, rounded, keeled in the middle, and the sides sometimes angular; the nostrils basal, lateral, and rounded. *Wings* reaching to the middle of the tail, with the third quill generally the longest. *Tail* more or less long, broad, and rounded. *Tarsi* very short, and covered with small scales. *Toes* long, with the outer ones equal, and all covered with small scales; the claws long, strong, and curved.

These birds are found in the tropical parts of South America. Their habits and manners are similar to those described in the preceding genus.

1. C. *festivus* (Linn.) Pl. enl. 840., Le Vaill. Perr. t. 88, 89. 129.
2. C. *pœcilorhynchus* (Shaw). — Psittacus ochrocephalus var. γ *Gmel.*; P. amazonicus var. γ *Lath.*; P. flavifrons *Herm.*
3. C. *farinosus* (Bodd.) Le Vaill. Perr. t. 85.92., Pl. enl. 861. — Psittacus pulverulentus *Gmel.*
4. C. *ochropterus* (Gmel.) Le Vaill. Perr. t. 86. 98. 98 bis. — P. xanthops *Wagl.*
5. C. *ochrocephalus* (Gmel.) Le Vaill. Perr. t. 84. 87. 89. — Psittacus barbadensis *Gmel.*; P. decorus *Herm.*; P. amazonicus *Kuhl*; P. ochrocephalus var. β *Gmel.* Pl. enl. 312.; P. amazonicus *Lath.* Pl. enl. 120.; P. aurorus *Gmel.* Pl. enl. 13.; P. guttatus *Bodd.*
6. C. *amazonicus* (Gmel.) Pl. enl. 547., Le Vaill. Perr. t. 110. 110 bis. — Psittacus Acurou *Shaw*; P. æstivus *Kuhl*; P. luteus *Gmel.*; P. luteolus *Lath.*; P. xanthops *Spix*, Av. Bras. t. 26.
7. C. *flavinuchus* (Gould), Proc. Z. S. 1843. p. 103., Voy. of Sulphur, Birds, pl.
8. C. *hypochondriacus* (Licht.)
9. C. *autumnalis* (Linn.) Edwards's Birds, pl. 164., Le Vaill. Perr. t. 111. — P. diadema *Spix*, Av. Bras. t. 32.
10. C. *brasiliensis* (Linn.) Edwards's Birds, pl. 161., Le Vaill. Perr. t. 106. — Psittacus autumnalis var. δ *Lath.*; P. cyanotis *Kuhl.*
11. C. *Bougueti* (Bechst.) Edwards's Birds, pl. 230., Le Vaill. Perr. t. 135. — Psittacus autumnalis var. β *Gmel.*; P. cærulifrons *Shaw*; P. cyaneocapillus *Vieill.*; P. pileatus *Cuv.*
12. C. *erythrurus* (Kuhl), Consp. Psitt. p. 77.
13. C. *Dufresneanus* (Kuhl), Consp. Psitt. p. 77., Le Vaill. Perr. t. 91.
14. C. *vinaceus* (Pr. Max.) Reise, ii. p. 198., Azara No. 286. — Psittacus columbinus *Spix*, Av. Bras. t. 27.
15. C. *havanensis* (Lath.) Pl. enl. 360., Le Vaill. Perr. t. 122. — Psittacus cyanopis *Vieill.*
16. C. *augustus* (Vigors), Proc. Z. S. 1836. p. 80.
17. C. *cyanogaster* (Vieill.) N. Dict. Hist. Nat. xxv. 328. — Psittacus melachitaceus *Spix*, Av. Bras. t. 28.; Type of Triclaria *Wagl.* (1830).

PSITTACULA *Briss.**

Bill large, rather compressed on the sides, with the culmen much arched to the tip, which is prolonged and acute; the lateral margins festooned; the nostrils basal, lateral, and rounded. *Wings* reaching to the end of the tail and pointed, with the first and second quills nearly equal and longest. *Tail* short and even, with the ends of the feathers truncated or pointed. *Tarsi* very short, and covered with small scales. *Toes* long, with the lateral outer toes equal, and all covered with small scales.

Various parts of America, Africa, Asia, and its archipelago, are the localities of these small birds. They are usually found in pairs or in small flocks, climbing among the upper branches of trees or shrubs, the fruits of which form their principal food; and they are occasionally seen flying rapidly from one bough to another, and often hanging by means of their feet with the head downwards in search of fruits. While feeding, they keep up a continual kind of shrill whistling chirp, something like a large grasshopper or cricket. Some species are often seen walking about on the ground in quest of seeds of grass. When sleeping, they generally suspend themselves by one or both feet with their head downwards. The eggs are usually deposited in holes of trees, or in the deserted nests of other birds. They are generally four in number.

1. P. *pileata* (Scop.) Temm. Pl. col. 207. — Psittacus erythrocephalus *Vieill.*; P. mitratus *Pr. Max.*; P. maitaca *Spix*, Av. Bras. t. 29. f. 1. t. 30.
2. P. *passerina* (Linn.) Kuhl, Edwards's Birds, pl. 235.; Spix Av. Bras. t. 33. f. 1, 2. — Agapornis cyanopterus *Swains.*; Psittacus gregarius *Spix*, Av. Bras. t. 34. f. 2, 3, 4.; P. cyanopterus *Bodd.*

* This division was established by Brisson in 1760 (*Ornithologie*). It embraces *Agapornis* of Mr. Selby (1836).

Pl. enl. 455. f. 1.; Agapornis guianensis *Swains.*; P. capensis *Gmel.*; P St. Thomæ *Kuhl.*

3. *purpurata* (Gmel.) Kuhl. — Psittacus porphyrurus *Shaw*, Nat. Misc. pl. 16.

4. P. *Hueti* (Temm.) Pl. enl. 491.

5. P. *batavica* (Bodd.) Sonn. Voy. N. Guin. t. 41., Pl. enl. 791. f. 1. — Psittacus melanopterus *Gmel.*; P. micropterus *Kuhl;* Le Vaill. Perr. t. 69.; cingulatus *Scop.*

6. P. *melanota* (Licht.) Kuhl, Consp. Psitt. p. 59. — Psittacus erythrurus *Pr. Max.*

7. P. *surda* (Licht.) Kuhl, Consp. Psitt. p. 59. — Psittacus chrysurus *Swains.* Zool. Ill. pl. 141.

8. P. *Swindereniana* Kuhl, Consp. Psitt. p. 62. t. 2., Lear's Parr. pl. 42. — Type of Agapornis *Selby* (1836).

9. P. *taranta* (Stahl), Salt's Trav. App. xlvi. pl. 55., Lear's Parr. pl. 39.

10. P. *roseicollis* (Vieill.) Kuhl, N. Dict. d'Hist. Nat. xxv. p. 377. — Psittacus pullarius var. β *Linn.*

11. P. *pullaria* (Linn.) Edwards's Birds, pl. 237., Pl. enl. 70.

12. P. *cana* (Gmel.) Pl. enl. 791. f. 2. — Psittacus poliocar *Forst.* Icon. ined. 51.

13. P. *batavensis* (Lath.) Le Vaill. Perr. t. 112, 113. — Psittacus personatus *Shaw;* P. Geoffroyanus *Vieill.;* P. Geoffroyi *Kuhl.*

14. P. *galgulus* (Linn.) Edwards's Birds, pl. 177., Pl. enl. t. 190. f. 2. — Psittacus flavigula *Bodd.* Sonn. Voy. N. Guin. t. 38. (lower figure); P. pumilio *Scop.*

15. P. *vernalis* (Sparr.) Mus. Carls. t. 29., Swains. Ill. Zool. — Psittacus pendulus *C. W. Smith.*

16. P. *melanoptera* (Scop.) Pl. enl. 520. f. 1., Sonn. Voy. N. Guin. t. 40. (upper figure).— Psittacus minor *Gmel.*, P. philippensis *Kuhl;* P. coulacissi *Vieill.*; Psittacula rubrifrons *Vigors*, Lear's Parr. pl. 41.

17. P. *indica* (Gmel.) Edwards's Birds, pl. 6. — Psittacus asiaticus *Lath.*

18. P. *Desmarestii* (Garn.) Voy. de la Coqu. Ois. t. 35.

19. P. *diophthalma* (Homb. & Jacq.) Ann. des Sci. Nat. 1841. p. 818.

20. P. *smaragdinis* (Homb. & Jacq.) Ann. des Sci. Nat. 1841. p. 318.

21. P. *reticulata* (Less.) Tr. d'Orn. p. 204.

22. P. *Loxia* (Cuv.) Less. Tr. d'Orn. p. 204.

23. P. *lunulata* (Scop.) Sonn. Voy. t. 39. — Psittacus torquatus *Gmel.* Lear's Parr. pl. 40.

24. P. *leucophthalma* (Scop.) Sonn. Voy. t. 38. (upper figure); — Psittacula simplex *Kuhl.*

25. P. *stigmata* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 182.

26. P. *cyanicollis* Mull. & Schl. Verh. Nat. Gesch. Nederl. Ind. p. 182.

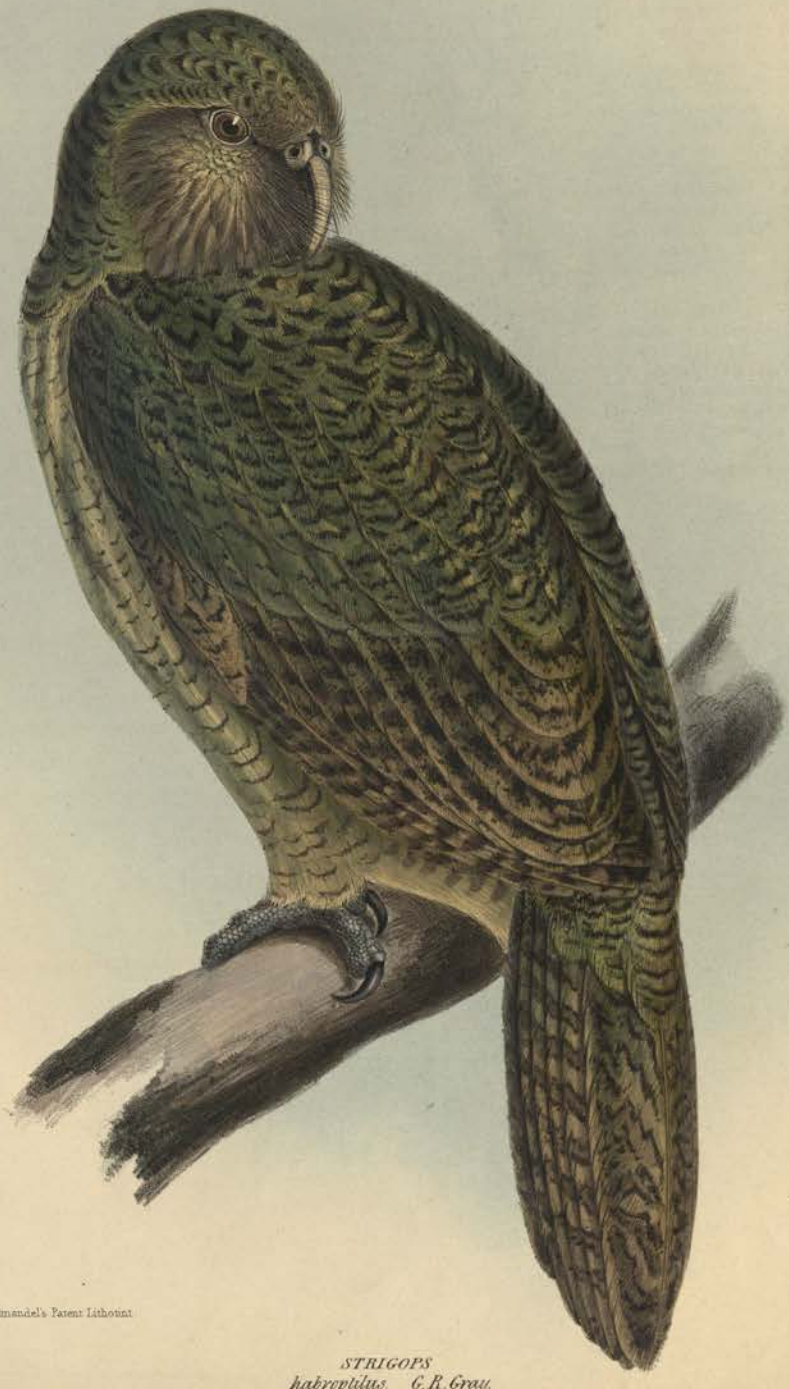
Nasiterna *Wagl.**

Bill short, elevated, and bare at the base, with the culmen curved to the tip, which is porrected, very acute, and the lateral margin near the apex deeply emarginated; the lower mandible rather large, with the gonys curved upwards, and the sides near the tip deeply sinuated; the nostrils basal, lateral, and rounded. *Wings* reaching to the end of the tail, with the first quill the longest. *Tail* short, broad, and rounded, with the apex of each feather prolonged into an acute point. *Tarsi* very short. *Toes* long, the outer lateral pair equal, and all covered with minute scales; the claws short and slightly curved.

This minute parrot is peculiar to New Guinea.

N. *pygmæa* (Quoy & Gaim.) Wagl. Voy. de l'Astrol. t. 21. f. 1, 2, 3, 4.

* Established by Wagler 1830 (*Abhandl. Akad. München*, 1832.). *Micropsitta* of M. Lesson (1831) is synonymous.



C.Hullmandel's Patent Lithotint

STRIGOPS
habroptilus. G.R.Gray.

1. CALYPTORHYNCHUS funereus. 2. MICROGLOSSUM aterrimum. 3. STRIGOPS habroptilus.

4. NESTOR notabilis. 5. CACATUA philippinarum. 6. LICMETIS nasicornis. 7. DASYPTILUS Pecqueti.

The fifth Subfamily,

CACATUINÆ, or COCKATOOS,

have the Bill generally large, of various length, broad at the base, more or less compressed on the sides, and the culmen usually much arched to the tip, which is very acute; the Wings generally rather long and pointed; the Tail more or less long, broad, and mostly even; the Tarsi short, robust, and covered with small scales; the Toes unequal.

MICROGLOSSUM *Geoffr.**

Bill very large, much compressed on the sides; the culmen much curved to the tip, which is lengthened and very acute, and the lateral margins of the upper mandible bidentated; the lower mandible smaller, with the gonys broad, flattened, and much emarginated on each side near the tip; the nostrils placed in the cere, which is covered with short erect feathers concealing the opening. *Wings* lengthened. *Tail* rather long and even. *Tarsi* very short, and covered with small scales. *Toes* covered with small scales, the two outer very long and nearly equal. The cheeks and the front of the throat denuded of feathers.

The forests of New Guinea, and the islands of Ceram, Banda, and Waigiou, are the localities of the species of this genus. Their habits and manners have not been recorded by naturalists.

1. M. *aterrimum* (Gmel.) Wagl. Edwards's Birds, pl. 316. — Psittacus gigas *Lath.*; P. griseus *Bechst.*; P. Goliath *Kuhl*, Le Vaill. Perr. t. 11, 12, 13., Gal. des Ois. t. 50.

2. M. *Alecto* (Temm.) Faun. Japon. p. 17.

CACATUA *Briss.*†

Bill strong, the sides compressed; the culmen flattened, and curved to the tip, which is hooked and acute; the lateral margins much festooned; the gonys of the lower mandible broad, slightly rounded, keeled in the middle, and rather emarginated at the tip; the nostrils placed in a narrow cere, large, and rounded. *Wings* long, with the second, third, and fourth quills nearly equal and longest. *Tail* rather short and even. *Tarsi* very short, and covered with small scales. *Toes* long, the outer ones the longest, covered with small irregular scales; the claws long, strong, and curved.

* Geoffroy established this genus in 1809. *Probosciger* of Kuhl (1820), *Solenoglossus* of Ranzini (1823), and *Eurhynchus* of Latreille (1825) are coequal.

† It was in 1760 that Brisson established this genus (*Ornithologie*, iv. p. 204.). Cuvier used in its place *Kakatoe* between 1799 and 1800, and in 1816 Vieillot proposed *Plyctolophus* for the same series of birds.

The birds that form this genus are found in the forests of the islands of the Moluccas and the continent of Australia. Some prefer the lofty trees that border the large rivers, and those that are located in swamps. Other species are usually observed on those that grow in the open plains and clear lands. They are shy, and it is therefore difficult to get near them; and, though usually not seen, their presence is easily discovered by their loud screaming notes, the effect of which is greatly increased by their vast numbers. They subsist entirely on vegetable substances, such as hard seeds, nuts, and small tuberous and bulbous roots, and they generally swallow stones along with their food. They also commit great destruction in the fresh cultivated lands, and on the smaller branches of the trees, by stripping off the bark, which they sometimes cut into small pieces. The appearance of this work of wanton devastation generally indicates that their nest is in a neighbouring tree. The eggs are generally deposited on the rotten mould in holes of trees, or are placed in fissures in the rocks: they are usually two in number.

1. C. *roseicapilla* Vieill. N. Dict. Hist. Nat. xvii. 12. — Psittacus Eos *Kuhl*, Gal. des Ois. t. 25., Pl. col. 81.; Cacatua rosea *Vieill.* Gal. des Ois. t. 25.
2. C. *philippinarum* (Gmel.) Wagl. Briss. Orn. iv. t. 22. f. 1., Pl. enl. 181. — Cacatua minor *Briss.*
3. C. *Leadbeateri* (Vigors), Wagl. Proc. Zool. Soc. 1831., Lear's Parr. pl. 5., Gould, B. of Austr. pl.
4. C. *moluccensis* (Gmel.) Wagl. Edwards's Birds, pl. 160., Pl. enl. 498.— Psittacus rosaceus *Lath.* Lear's Parr. pl. 2.; Cacatua rubro-cristata *Briss.*; Cac. erythrolophus *Less.*
5. C. *cristata* (Linn.) Vieill. Pl. enl. 263. — Cacatua leucolophus *Less.*
6. C. *galerita* (Lath.) Vieill. White, Journ. pl. p. 237., Lear's Parr. pl. 3. — Cacatua chrysolophus *Less.* Gould, B. of Austr. pl.
7. C. *sulphurea* (Gmel.) Vieill. Edwards's Birds, pl. 317., Pl. enl. 14., Lear's Parr. pl. 4.; Cacatua luteo-cristata *Briss.*
8. C. *citrino-cristata* Fr. Proc. Z. S. 1844.
9. C. *sanguinea* Gould, Proc. Z. S. 1842. 138.

Licmetis *Wagl.**

Bill much lengthened, with the culmen slightly curved and narrowed to the tip, which is acute; the gonys of the lower mandible broad and rounded. The other characters like those of *Cacatua.*

The species of this genus are peculiar to the continent of Australia. They live in flocks on the trees that grow in the neighbourhood of rivers and swamps. Their food partly consists of bulbous roots, which they scratch up from beneath the ground, even from a considerable depth. It has been remarked that the voice of these birds is more plaintive than that of the other species of cockatoos.

1. L. *tenuirostris* (Kuhl), Wagl. Brown's Illustr. pl. 5. — Psittacus nasicus *Temm.* Pl. col. 331.
2. L. *pastinator* Gould, Proc. Z. S. 1840. 175.

Calyptorhynchus *Vig. & Horsf.*†

Bill large, strong, much higher than long, broad at the base, and the sides compressed; with the culmen greatly arched to the tip, which is acute; the lower mandible small, dilated, and strongly emarginated at the tip, with the gonys broad and rounded. *Wings* moderate, with the second, third, and fourth quills equal and longest. *Tail* rather lengthened and rounded. *Tarsi* very short, strong, and covered with small scales. *Toes* long, the outer toes longest, and covered with small irregular scales; the claws long, strong, and curved.

The Australian continent is the peculiar country for the species that compose this genus. They live in small flocks in wooded districts near the rivers, feeding on the fruits and bark of the species of Eucalyptus, of which from their

* Established by Wagler in 1830. (*Abhandl. Akad. München*, 1832, p. 505.)
† The late Mr. Vigors and Dr. Horsfield established the above generic name in 1826 (*Linn. Trans.* xv. p. 269.). *Banksianus* and *Callocephalon* of M. Lesson (1831) and *Corydon* of Wagler (1830) are embraced in this genus.

wasteful habits, they destroy much more than they consume. Their flight is heavy and noisy, and from their extreme shyness it is difficult to approach them. They are very destructive to certain trees, by cutting off the smaller branches and the unripe fruits. The eggs, which are usually two or three in number, are laid by the female in holes of decayed trees, on the bare woody mould which the birds make in forming the hollows.

1. C. *funereus* (Shaw), Vig. & Horsf. Shaw's Nat. Misc. pl. 186., Mag. de Zool. 1834. t. 24.
2. C. *Banksii* (Lath.) Vig. & Horsf. Lath. Syn. Suppl. pl. 109., Phill. Voy. pl. in p. 267. — Psittacus magnificus *Shaw*, Nat. Misc. pl. 50., Mag. de Zool. 1834. t. 26.; Banksianus australis *Less.*
3. C. *Cookii* (Temm.) Vig. & Horsf. Nov. Act. &c. x. t. 3. — Psittacus Leachii *Kuhl.*
4. C. *Temminckii* (Kuhl), White, Journ. pl. p. 139.— Psittacus Solandri *Temm.* Mag. de Zool. 1834. t. 27, 28.; Cacatua viridis *Vieill.*
5. C. *Baudinii* Lear, Parrots, pl. 6. Mag. de Zool. 1834. t. 25.
6. C. *stellatus* Wagl. Monogr. Psitt. Handl. Akad. München, 1832. p. 685. t. 27.
7. C. *macrorhynchus* Gould, Proc. Z. S. 1842. 138.
8. C. *xanthonotus* Gould, Proc. Z. S. 1837. 151.
9. C. *naso* Gould, Proc. Z. S. 1836. 106.
10. C. *galeatus* (Lath.) Vig. & Horsf. Lath. Syn. of Birds, Suppl. ii. pl. 140.—Psittacus phœnicocephalus *Mus. Paris.*; Callocephalon australe *Less.* Zool. Thetis, t. 47, 48.; Type of Corydon *Wagl.* (1830).
11. ? C. *fulgidus* (Less.) Tr. d'Orn. p. 181.

Nestor *Wagl.**

Bill much lengthened, the sides compressed, especially near the culmen, which is rounded and much arched to the tip, which is very long and acute; the base of the lower mandible partly hidden by the projecting feathers, and the sides rather compressed, with the gonys nearly flat and ascending towards the tip; the nostrils moderate, rounded, and placed in the cere. *Wings* long and pointed, with the third and fourth quills the longest. *Tail* moderate, and nearly even at the end, with the feathers firm and broad, and the shafts prolonged beyond the web. *Tarsi* as long as the inner anterior toe, and covered with small scales. *Toes* moderate, the two outer ones the longest, and all covered with small irregular scales.

New Zealand and the continent of Australia are the countries of the two species that at present form this genus. They are usually found in the trees seeking the nuts and berries, on which they subsist, as also on bulbous roots which they dig up from the swampy ground. In the morning and evening they are very noisy and querulous.

1. N. *australis* (Shaw), Lev. Mus. pl. p. 87. — Psittacus meridionalis *Gmel.*; P. Nestor *Lath.*; P. hypopolius *Forst.* Desc. Anim. p. 72., Icon. ined. pl. 50.; Nestor novæ zealandiæ *Less.* Gould, B. of Austr. pl.
2. N. *productus* (Gould), Proc. Z. S. 1836. 19.

Strigops.

Bill higher than broad, slightly compressed, and grooved on the sides; the culmen much curved to the tip, which is acute; the lateral margins dentated in the middle; the lower mandible with the gonys broad, rounded, and much grooved longitudinally, and the base of both mandibles covered by the basal feathers, with the shaft of each prolonged into hairs; the nostrils basal, lateral, large, and rounded. *Wings* rather short and rounded, with the fifth and sixth quills equal and longest. *Tail* moderate, weak, and much rounded, with the end of each feather rather pointed, and the shafts projecting beyond the web.

* Wagler established this genus in 1830 (*Abhandl. Akad. München*, 1832, p. 505.). *Centrourus* (1837) of Mr. Swainson is synonymous.

Tarsi short, robust, and covered with rounded scales. *Toes* unequal, and covered with quadrate scales, except at the end of each toe where the scales are transverse; the claws long, strong, and slightly curved.

This remarkable bird was found in one of the islands of the South Pacific Ocean. Its manners and habits are unknown; but, from the appearance of the bill, I am induced to suppose that it feeds on fruits that are enveloped in a strong hard coating.

S. *habroptilus* G. R. Gray.

Dasyptilus *Wagl.**

Bill longer than high, thick, rather compressed on the sides; the culmen curved to the tip, which is acute; the gonys of the lower mandible rounded and keeled, with the tip deeply emarginated; the nostrils rounded, and placed in the cere. *Wings* long, rounded, and the fourth quill the longest. *Tail* moderate, broad, and rounded. *Tarsi* short, strong, and covered with small scales. *Toes* moderate, and covered with small irregular scales.

This bird is supposed to be a native of New Guinea.

D. *Pecquetii* (Less.) Wagl. Bull. Univ. 1831. 241., Less. Ill. Zool. t. 1.

* Established in 1830 (*Handl. Akad. München*, 1832, p. 502.) by Wagler. M. Lesson's genus *Psittrichas* (1831) is cocqual with the one employed.

C.Hullmandel's Patent Lithotint

CAPITO
Richardsoni. G.R.Gray

Order III. SCANSORES.

The third Family,

PICIDÆ, or Woodpeckers,

have the Bill generally lengthened, acute, and straight, with the base more or less broad, and the sides much compressed towards the tip, which is usually obtuse.

The first Subfamily,

CAPITONINÆ, or Barbets,

have the Bill large, broad at the base, usually furnished with bristles, and compressed towards the tip; the Tail generally short, even, and the feathers rounded at the ends.

Laimodon.*

Bill large, elevated, and broad at the base, with the culmen arched, and the sides compressed towards the tip, which is acute; the lateral margins strongly and irregularly dentated; the nostrils basal, lateral, and concealed, and the base of both mandibles furnished with long bristles. *Wings* moderate, with the third to the sixth quills nearly equal and longest. *Tail* moderate and even. *Tarsi* as long as the outer toe, and covered in front with broad scales. *Toes* unequal, the outer pair equal, and the two anterior ones united to the first joint; the claws short, compressed, and curved.

These species inhabit the forests of Africa, where they are usually observed in pairs, living on insects and fruits. They select a hole of a rotten tree in which the female generally deposits her eggs on the bare wood. On quitting the nest the young form a small band with the parents, and all live together in perfect harmony, until they in their turn separate in couples. These birds are so devoid of fear that it is easy to find their nest, it being only necessary to follow the little band towards evening to the hole where they reside, and to which they always retire to pass the night. They sometimes take possession of one of the cells of the large nests of the weavers, which build in society.

1. L. *dubius* (Gmel.) Pl. enl. 602., Le Vaill. Barb. t. 19. — Pogonius sulcirostris *Leach*, Zool. Misc. pl. 76.; Pogonia erythromelas *Vieill.* Gal. des Ois. t. 32.

2. L. *bidentatus* (Shaw), Nat. Misc. pl. 393. — Pogonius lævirostris *Leach*, Zool. Misc. pl. 77., Le Vaill. Barb. t. Suppl. K.; Bucco leuconotus *Vieill.*; P. Levaillantii *Leach*, Zool. Misc. pl. 117., Le Vaill. Barb. t. Suppl. A.

3. L. *nigrothorax* (Cuv.) Le Vaill. Barb. t. 28. — Pogonias personatus *Temm.* Pl. col. 201.

4. L. *Saltii* (Stanl.) Salt's Trav. App. xliv. liv., Lath. Hist. of B. iii. pl. 53. — Pogonias rubrifrons *Swains.* Zool. Ill. pl. 68.; P. hæmatops *Wagl.*; Loxia abyssinica *Gmel.*?; Hyreus abyssinicus *Steph.*?; Phytotoma tridactyla *Daud.*; Pogonias Brucei *Rüpp.* Faun. Abyss. t. 20. f. 1.

* This genus was originally established by Illiger (1811) under the name of *Pogonias*, which was employed as *Pogonia* by Vieillot (1816), and *Pogonius* by Leach (1816); but, these names having been previously employed, the above appellation was proposed by me in its place in 1841.

5. L. *Vieillotii* (Leach), Zool. Misc. pl. 97., Le Vaill. Barb. Suppl. t. D. — Bucco rubicon et B. fuscescens *Vieill.*; Pogonias senegalensis *Licht.*

6. L. *leucomelas* (Bodd.) Pl. enl. 688. f. 1. — Bucco niger *Gmel.*; Pogonius Stephensii *Leach*, Zool. Misc. pl. 116.; Bucco rufifrons *Steph.* Vaill. Barb. t. 29, 30, 31.; Trogon luzonensis *Scop.* Sonn. Voy. t. 34., Gal. des Ois. t. 33.

7. L. *hirsutus* (Swains.) Zool. Illustr. pl. 72.

8. L. *bifrenatus* (Ehrenb.) Symb. Phys. t. 8. f. 2. — Pogonias melanocephala *Rüpp.* Atlas, t. 28. f. A.

9. L. *unidentatus* (Licht.) Verz. südafric. Thiere, p. 17.

10. L. *undatus* Rüpp. Faun. Abyss. t. 20. f. 2.

Megalaima.*

Bill more or less long, broad at the base, and compressed on the sides; the culmen generally arched to the tip, which is acute; the gonys long, and advancing upwards, and the lateral margins curved; the nostrils basal, lateral, and rounded, and the base of the upper mandible furnished with very long strong bristles. *Wings* moderate, with the fourth, fifth, and sixth quills nearly equal and longest. *Tail* short, and rounded on the sides. *Tarsi* shorter than the outer anterior toe, and covered in front with broad scales. *Toes* long, and the outer pair of equal length and longest; the claws moderate, compressed, and acute.

These birds are extremely abundant in most parts of the continent of India and its archipelago; a few species, however, are peculiar to Africa. They prefer the open spaces in the jungles, or wherever a few trees are to be found for them to perch upon, and being far from shy they frequently approach gardens and groves. Their food consists of various fruits and insects, which they search for while hopping among the branches. When roosting singly on the uppermost branch of a tree, they usually utter a monotonous note, that lasts for ten minutes or more at a time, then ceasing for a while, and again commencing the same inharmonious sound; the note is very peculiar, striking the ear something like a distant hammering of metal. They have been observed climbing round, and pecking holes in a horizontal rotten branch, precisely in the manner of the woodpecker, though they do not apply their tail for support while thus occupied; in the interior of the hole is built the nest.

1. M. *virens* (Bodd.) Pl. enl. 871. — Bucco grandis *Gmel.* Le Vaill. Barb. t. 20., Gould, Cent. of Birds, pl.

2. M. *chrysopogon* (Temm.) Pl. col. 285.

3. M. *versicolor* (Raffl.) Linn. Trans., Pl. col. 309.; B. Raffiesii *Less.* Rev. Zool. 1839. 137.

4. M. *mystacophanes* (Temm.) Pl. col. 315.

5. M. *quadricolor* (Eyton), Proc. Z. S. 1839. p. 105.

6. M. *Oorti* (Müll.) Tidskr. Naturl. Geschied. t. 4. f. 4. — Bucco Henrici *Temm.* Pl. col. 524.

7. M. *australis* (Horsf.) Linn. Trans. xiii. p. 181. — Bucco gularis *Temm.* Pl. col. 89. f. 2.

8. M. *javanensis* (Horsf.) Linn. Trans. xiii. p. 181., Le Vaill. Barb. Suppl. t. C. — Bucco Kotorea *Temm.* Pl. col.

9. M. *asiatica* (Lath.) Lath. Hist. pl. — Capito cyanocollis *Vieill.* Gal. des Ois. t. 35.; Bucco cyanops *Cuv.*; B. cæruleus *Dum.* Le Vaill. Barb. t. 21, 22.

10. M. *flavifrons* (Cuv.) Le Vaill. Barb. t. 55. — Bucco aurifrons *Temm.*

11. M. *armillaris* (Temm.) Pl. col. 89. f. 1.

12. M. *trimaculata* (Gray), Zool. Misc. p. 3. pl. 3. — Bucco frontalis *Temm.* Pl. col. 536. f. 1.; B. Duvaucelii *Less.*

13. M. *rosea* (Cuv.) Le Vaill. Barb. t. 33. & 56.? — Capito rosaceicollis *Vieill.*; Bucco barbiculus *Cuv.*; B. roseicollis *Vigors.*

14. M. *philippensis* (Briss.) Pl. enl. 331. — Bucco flavigula *Bodd.*; B. indicus *Lath.*; B. parvus *Gmel.*

15. M. *lutea* (Less.) Tr. d'Orn. p. 183.

16. M. *rubricapilla* (Gmel.) Brown's Ill. pl. 14.

17. M. *Lathami* (Gmel.) Lath. Syn. ii. pl. 22.

18. M. *maculata* (Gmel.) Brown's Ill. pl. 13.

19. M. *corvina* (Temm.) Pl. col. 522.

20. M. *faiostriata* Temm. Pl. col. 527.

21. M. *viridis* (Bodd.) Pl. enl. 870. — Bucco zeylonicus *Gmel.*? Brown's Ill. pl. 15.?; B. lineatus *Tick.*

22. M. *caniceps* (Frankl.) Proc. Z. S. 1831. p. 121., Le Vaill. Barb. t. 38.

23. M. *malaccensis* (Hartl.) Rev. Zool. 1842. p. 337.

24. M. *calva* (Lafr.) Rev. Zool. 1841. p. 241.

* The birds that compose this division have been considered as forming the genus *Bucco* of Linnæus, but that name has since been more properly applied to a series of South American birds. The above appellation has therefore been given to this series of birds. It includes *Barbatula* of M. Lesson (1837), with which *Pogoniolus* of Baron Lafresnaye is synonymous.

25. M. *Franklinii* (Blyth), Journ. A. S. Beng. 1842. p. 167. — Bucco ignitus *Hodgs.*

26. M. *parva* (Bodd.) Pl. enl. 746. f. 2. — Bucco parvus *Gmel.*

27. M. *barbatula* (Temm.) — Bucco parvus *Cuv.* Le Vaill. Barb. t. 32.; B. pusillus *Dum.*; Capito rubrifrons *Vieill.*; B. chrysopterus *Swains.*; B. chrysozonicus *Rüpp.*; Bucco nanus *Vigors*, Proc. Z. S. 1831. p. 93.; Barbatula nana *G. R. Gray*; Type of Barbatula *Less.* (1837).

28. M. *atroflava* (Blum.) Le Vaill. Barb. t. — Bucco erythronotus *Cuv.*

29. M. *chrysocona* (Temm.) Pl. col. 536. f. 2.

Capito *Vieill.**

Bill long, broad at the base, with the sides suddenly compressed, and the culmen arched towards the tip; the gonys long and advancing upwards; the nostrils basal, lateral, and rounded; the base of the upper mandible furnished with a few short bristles. *Wings* moderate and pointed, with the fourth, fifth, and sixth quills equal and longest. *Tail* long and rounded. *Tarsi* as long as, or longer than, the anterior outer toe, and covered with broad scales. *Toes* unequal, the outer pair the longest and equal, the inner pair short and unequal; the claws moderate, compressed, and curved.

The tropical regions of South America are the localities for most of the species; but some are found in various parts of Africa. Their manners and habits are supposed to be the same as those of the last genus; but they have not hitherto been recorded by travellers.

1. C. *erythrocephalus* (Bodd.) Pl. enl. 206. f. 1. — Bucco cayanensis *Gmel.* Le Vaill. Barb. t. 23, 24, 26.

2. C. *nævius* (Temm.) Pl. enl. 206. f. 2., Le Vaill. Barb. t. 25.

3. C. *peruvianus* (Cuv.) Le Vaill. Barb. t. 27. — Micropogon aureus *Temm.*

4. C. *aurifrons* (Vigors), Proc. Z. S. 1832. p. 3.

5. C. *flavicollis* (Pr. Bonap.) Proc. Z. S. 1837. 120.

6. C. *aurovirens* (Cuv.) Pr. Bonap. Le Vaill. Barb. Suppl. E.

7. C. *maynanensis* (Briss.) Pl. enl. 330., Le Vaill. Barb. t. 34. — Bucco pictus *Bodd.*; B. elegans *Gmel.*

8. C. *cinctus* (Temm.) Le Vaill. Barb. t. 37.

9. C. *Bourcierii* (Lafr.) Rev. Zool. 1845. p. 179.

10. C. *Hartlaubii* (Lafr.) Rev. Zool. 1845. p. 180.

11. C. *margaritieus* (Rüpp.) Atlas, t. 20., Pl. col. 490. — Tamatia erythropygos *Ehrenb.*

12. C. *Vaillantii* (Ranz.) Le Vaill. Barb. t. 32. — Micropogon sulphuratus *Lafr.* Mag. de Zool. 1836. t. 60.; Polysticte quopopa *Smith*; Picus cafer *Gmel.*?; P. Lathami *Wagl.*; Type of Trachyphonus *Ranz.* (1823).

13. C. ? *subsulphureus* (Fras.) Proc. Z. S. 1843. p. 3.

14. C. *punctatus* Less. Tr. d'Orn. p. 65.

15. C. *Richardsoni* G. R. Gray.

Psilopogon *Müll.*†

Bill large, broad at the base, with the sides suddenly compressed, and the culmen arched towards the tip, which is acute; the nostrils basal, lateral, and hidden by the projecting bristles that cover the base of the culmen. *Wings* moderate, with the fourth to the sixth quills the longest. *Tail* long and much rounded. *Tarsi* as long as the outer anterior toe, and covered in front with broad scales. *Toes* long, the anterior outer toe longer than the posterior outer one; the claws moderate, compressed, and curved.

* Vieillot established this genus in 1816 (*Analyse*, p. 27.). *Nyctades* of M. Gloger (1827) and *Micropogon* of M. Temminck (182?) are synonymous. It includes Ranzini's genus *Trachyphonus* (1823), with which *Cucupicus* of M. Lesson (1831), *Polysticte* of Dr. A. Smith (1835), and *Promepicus* of Baron Lafresnaye are synonymous.

† It was in 1835 that M. Müller proposed this division.

The only species is found in the vast forests of Sumatra, where it wanders from tree to tree in search of various kinds of wild berries, preferring especially the fruits of the wild figs.

P. *pyrolophus* Müll. Pl. col. 597.

MEGALORHYNCHUS *Eyton.**

Bill large, more elevated than broad at the base, and the sides suddenly compressed, with the culmen arched and keeled towards the tip, which is slightly hooked; the nostrils basal, lateral, large, and covered with small bristles. *Wings* moderate, with the third to the sixth quills nearly equal and longest. *Tail* moderate and rounded. *Tarsi* the length of the anterior outer toe, and covered in front with broad scales. *Toes* long, the outer lateral toes equal, the anterior pair united at the base beyond the first joint; the claws moderate, compressed, and curved.

The type is found in Malacca; but its habits and manners have not been noticed.

M. *Hayii* (Gray), Zool. Misc. p. 33. — Micropogon fuliginosus *Temm*; Caloramphus sanguinolentus *Less.*; Megalorhynchus spinosus *Eyton.*

* Mr. Eyton established this genus in 1839 (*Proc. Zool. Soc.* 1839, p. 106.). *Caloramphus* of M. Lesson (1839) is synonymous.

March, 1846.

Hullmandel & Walton Lithographers.

PICUMNUS
pygmæus. (Licht.) Lafr.

PICUMNINÆ.

1. MEGALAIMA mystacophanes. 2. LAIMODON dubius. 3. EULOPHOGON pyrolophus. 4. CAPITO erythrocephalus.
5. MEGALORHYNCUS Hayii. 6. SASIA ochracea. 7. PICUMNUS minutissimus.

The second Subfamily,

PICUMNINÆ, or PICULETS,

have the Bill short, straight; the sides compressed towards the tip, which is rather acute; the gonys of the lower mandible lengthened, and advancing upwards; and the Tail short, with the tip of each feather broad and rounded.

PICUMNUS *Temm.**

Bill short, higher at the base than broad, with the culmen nearly straight and keeled; the sides compressed towards the tip, which is pointed; the gonys long, and advancing upwards to the tip, which is rather acute; the nostrils basal, lateral, and concealed by the frontal plumes. *Wings* rounded, with the third, fourth, and fifth quills the longest. *Tail* short, and rounded at the tip of each feather. *Tarsi* short, and covered with broad scales in front. *Toes* long and unequal, with the two anterior ones united at the base as far as the first joint, and the two outer ones equal in length; the claws long, compressed, and curved.

The vast forests of South America and India are the localities of the species that compose this genus. They are found singly or in pairs on the branches of small trees, firmly grasping them with their toes, and keeping their bodies crosswise. These singular birds possess the power of leaping from one branch to another, but they do not usually support themselves on the trunks by means of their tail, as is the case with the true woodpeckers. The nests are said to be formed in rotten trunks of trees; and the female lays two eggs.

1. P. *minutissimus* (Gmel.) — Picus minutus *Lath.*; P. cirratus *Temm.* Pl. col. 371. f. 1.; Picumnus cayanensis *Lafr.*; Picus cayanensis minor *Briss.*
2. P. *Temminckii* Lafr. — Picumnus exilis *Temm.* Pl. col. 371. f. 2.
3. P. *exilis* (Licht.) — Picumnus Lichtensteinii *Lafr.*
4. P. *pygmæus* (Licht.) Cat. Dupl. Berl. Mus. p. 12.
5. P. *Buffoni* Lafr. Pl. enl. 786. f. 1.
6. P. *albosquamatus* D'Orb. & Lafr. Voy. dans l'Amér. Mér. Ois. t. 64. f. 2.
7. P. *olivaceus* Lafr. Rev. Zool. 1845. p. 7.
8. P. *cinnamomeus* Lafr. Rev. Zool. 1845. 7.
9. P. *D Orbignyanus* Lafr. Rev. Zool. 1845. 7.
10. P. *rufiventris* (Pr. Bonap.) Proc. Z. S. 1837. p. 120.
11. P. *innominatus* Burt. Proc. Z. S. 1835. 154. — Vivia nipalensis *Hodgs.* Journ. As. Soc. Beng. 1837. 107.; Piculus nipalensis et P. rufifrons *Hodgs. List.*

SASIA *Hodgs.*†

Bill long, broad at the base, and with the sides suddenly compressed towards the tip, which is acute; the gonys long and advancing upwards to the acute tip; the nostrils basal, lateral, and hidden by the

* M. Temminck established this genus in 182–? (*Planches Coloriées*, with pl. 371.)
† Established by Mr. Hodgson in 1836 (*Journ. As. Soc. Beng.* 1836, p. 778.). In 1841 he changed the above name to *Comeris*; while, in 1840, I had in the *List of Genera* proposed *Microcolaptes* for these birds.

frontal plumes. *Wings* long, reaching to the end of the tail, with the fourth and fifth quills equal and longest. *Tail* very short and rounded. *Tarsi* short, and covered with broad scales in front. *Toes* moderate, with the two outer toes of equal length, and the inner posterior one wanting.

These birds are found in the forests of India and its archipelago.

1. S. *abnormis* (Temm.) Pl. col. 371. f. 3.

2. S. *ochracea* Hodgs. Journ. As. Soc. Beng. 1836, 778.

C.Hullmandel's Patent Lithotint.

CAMPEPHILUS
Malherbii *G.R.Gray*

1. DENDROBATES fulviscapus. 2. HEMICERCUS concretus. 3. CAMPEPHILUS principalis.
4. CHRYSOCOLAPTES striatus. 5. DRYOCOPUS martius. 6. PICUS major. 7. PICOIDES tridactylus.

JOHN GOULD TESTIMONIAL FUND

C. Hullmandel & Ferneri Imp.

The third Subfamily,

PICINÆ, or WOODPECKERS,

have the Bill more or less long, broad at the base, much compressed towards the tip, which is truncated; the sides of the upper mandible sloping, and furnished with a lateral ridge, that springs from the middle at the base, gradually bends towards the lateral margin, and then extends above it to the tip: the outer posterior Toe generally longer than the outer anterior toe.

PICOIDES *Lacép.**

Bill shorter than the head, straight; the base broader than high, and covered with projecting feathers; the sides compressed towards the tip, which is rather pointed; the gonys lengthened, and advancing upwards. *Wings* moderate and pointed, with the second, third, and fourth quills the longest. *Tail* moderate, wedge-shaped, and rigid. *Tarsi* as long as the anterior outer toe, and partly covered with feathers. *Toes* short and nearly equal; the outer posterior toe longer than the anterior one; the inner posterior toe wanting; the claws long, much compressed, and curved.

These birds inhabit the forests of the northern parts of both hemispheres. They prefer the pines and spruce firs, on the trunks and branches of which they seek in the decayed parts for insects in their various stages. They sometimes feed on seeds and berries. The eggs are laid in holes formed by the birds in the trunks of the trees. They are usually four to six in number.

1. P. *tridactylus* (Linn.) Werner's Atlas to Temm. Man. pl. — Picoides europæus *Less.*; P. crissoleucos *Brandt.*
2. P. *arcticus* (Rich. & Sw.) Faun. Bor. Amer. pl. 57. — Picus tridactylus *Pr. Bonap.* Amer. Orn. pl. 14. f. 2.
3. P. *hirsutus* (Vieill.) Ois. d'Amér. Sept. t. 124. — Picus tridactylus *Rich. & Sw.* Faun. Bor. Amer. pl. 56.; P. undulatus *Vieill.*

PICUS *Linn.*†

Bill moderate, the base equally broad as high, the sides sloping, and beneath the lower mandible rounded; the nostrils basal, lateral, and hidden by the strong projecting bristles. *Wings* rather short and pointed, with the fourth quill the longest. *Tail* lengthened and rounded. *Tarsi* shorter than the anterior outer toe. *Toes* unequal, with the anterior outer one shorter than the outer posterior toe; the inner posterior toe short; the claws strong and curved.

The birds that compose this genus are found in most parts of the world, in some places migrating from the north to the south, and *vice versâ*, according to the season. They frequent the forests, woods, and orchards, and are observed

* Established by Lacépède between 1800 and 1801. *Tridactylia* of Shaw (1815) and *Apternus* of Mr. Swainson (1831) are coequal.
† Linnæus established this genus in 1735. *Dryobates* of M. Boie (1826) is coequal.

DENDROBATES *Swains.**

Bill as long as, or shorter than, the head, broad at the base ; the nostrils lateral, basal, and hidden by the projecting plumes. *Wings* long and pointed, with the second, third, and fourth quills nearly equal and longest. *Tail* moderate, graduated, and rigid. *Tarsi* shorter than the outer anterior toe. *Toes* unequal, and the outer posterior generally longer than the anterior ; the hind toe short and slender ; the claws long, compressed, and much arched.

Most of the species of this genus are found in the woods of the continent of Africa, and a few in the forests of South America. Their habits and manners are very similar to those already noticed.

1. D. *fulviscapus* (Ill.) Swains. Le Vaill. Ois. d'Afr. t. 253. f. 1, 2. — Picus fuscescens *Vieill.* ; P. chrysopterus *Cuv.* ; Colaptes? capensis *Steph.*
2. D. *abyssinicus*.(Hempr. & Ehrenb.)—Picus fuscescens *Rüpp.* ; D. Hemprichii *Rüpp.* Orn. Faun. von Nord-Ost Afr. t. 35.
3. D. *griseocephalus* (Bodd.) Pl. enl. 786. f. 2., Le Vaill. Ois. d'Afr. t. 249. — Picus capensis *Gmel.* ; P. caniceps *Wagl.*
4. D. *poliocephalus* (Cuv.) Wagl. Syst. Av. sp. 47.
5. D. ———. — Picus poliocephalus *Swains.* B. of W. Afr. ii. 154.
6. D. *immaculatus* Swains. B. of W. Afr. ii. 152., Rüpp. Mus. Senck. iii. 119., Ornith. Faun. von Nord-Ost Afr. t. 34.
7. D. *senegalensis* (Gmel.) Pl. enl. 345. f. 2. — Picus tephrodops *Wagl.* ; P. striolatus *Less.*
8. D. *namaquus* (Licht.) Cat. Dupl. Berl. Mus. p. 17., Le Vaill. Ois. d'Afr. t. 251, 252. — Picus mystaceus *Vieill.* ; P. biarmicus *Cuv.* ; P. diophrys *Steph.*
9. D. *shoensis* Rüpp. Mus. Senck. iii. 120., Ornith. Faun. von Nord-Ost Afr. t. 33.
10. D. *goertans* (Gmel.) Pl. enl. 320.
11. D. *percussus* (Temm.) Pl. col. 390, 391. — Picus Rüppellii *Wagl.*
12. D. *callonotus* (Waterh.) Proc. Z. S. 1840. 182.
13. D. *olivaceus* (Gray), Zool. Misc. p. 18.
14. D. *africanus* (Gray), Zool. Misc. p. 18.
15. D. *passerinus* (Linn.) Briss. Orn. ix. t. 4. f. 2. — Picus maculifrons *Spix*, Av. Bras. t. 56. f. 1. ; P. ruficeps *Spix*, Av. Bras. t. 56. f. 2.

HEMICERCUS *Swains.*†

Bill short, broad at the base, and much compressed on the sides towards the tip; the gonys long, and ascending upwards to the tip, which is acutely pointed ; the nostrils basal, lateral, and hidden by the projecting plumes. *Wings* long, reaching to the end of the tail, with the third, fourth, and fifth quills nearly equal and longest. *Tail* very short, broad, and even, with the end of each feather rounded. *Tarsi* as long as the inner anterior toe, and strong. *Toes* long, unequal ; the outer anterior toe rather shorter than the outer posterior one ; the hind toe short ; the claws moderate, compressed, and curved.

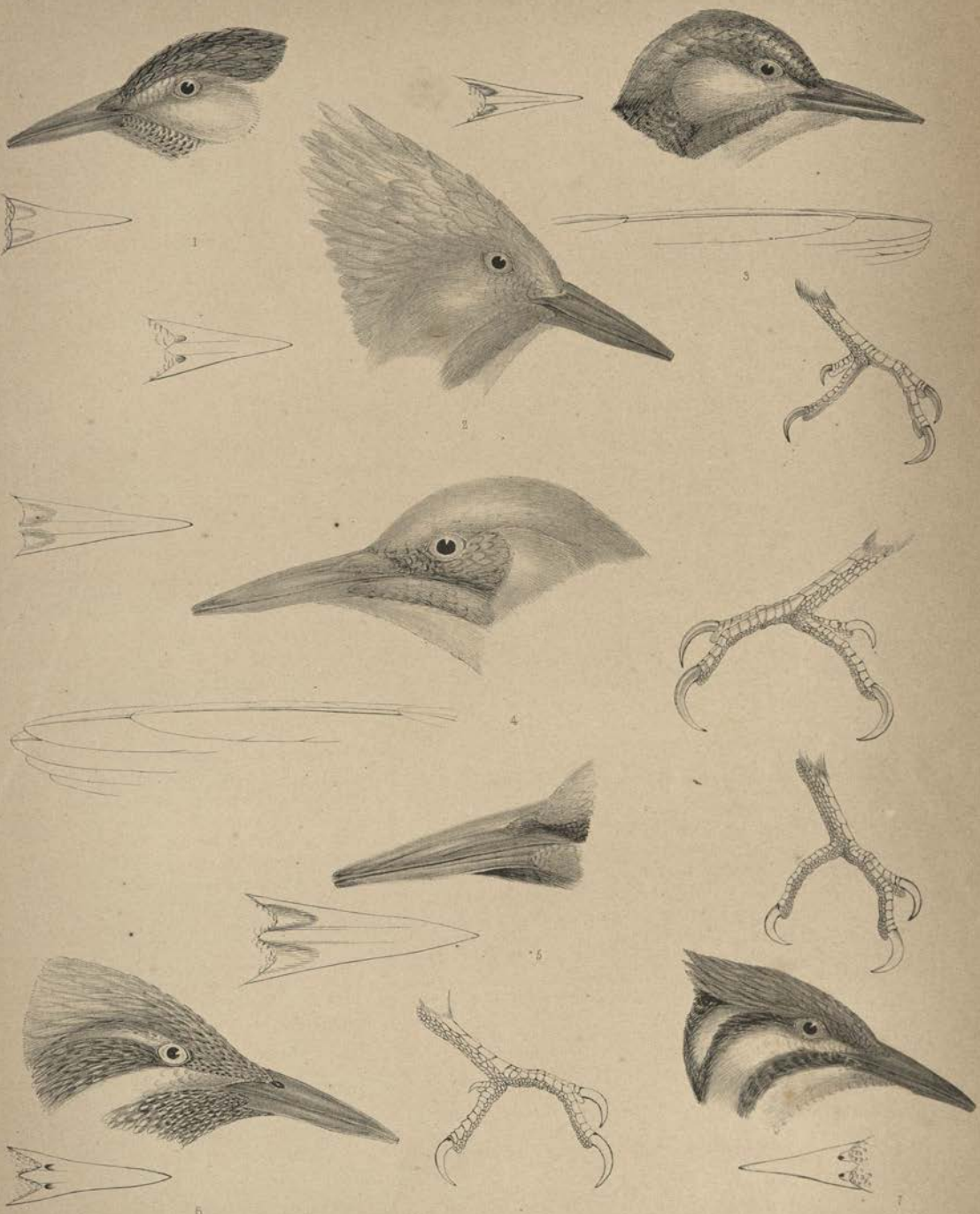
These remarkable small birds are peculiar to the continent of India, its archipelago, and Africa. They are found solitary in the forests, perched on the boughs, or climbing round the branches. They are not shy, for when disturbed they fly only to a short distance, and then return to the same tree again. If excited, they erect not only the feathers of the head, but also those of the back, which gives them a singular appearance. Their food consists of the larvæ of insects, that are found on the branches, or in the crevices of the bark.

1. H. *concretus* (Reinw.) Swains. Pl. col. 90. f. 1, 2.
2. H. *canente* (Less.) Cent. Zool. t. 73.
3. H. *cordatus* (Jerd.) Madr. Journ. of Lit. & Sci. xi. p. 211.
4. H. *rubiginosus* Swains. B. of W. Afr. ii. p. 150.
5. H. ———.— Hemicercus rubiginosus *Hartl.* Rev. Zool. 1844. 402.

* Mr. Swainson established the above generic name in 1837 (*Class. of Birds*, ii. p. 306.).
† This genus was established in 1837 by Mr. Swainson (*Class. of Birds*, ii. p. 306.).

C. Hullmandel's Patent Lithotint.

GECINUS
flavinucha. Gould.



1 CHRYSOPTILUS melanochloris. 2. CELEUS flavescens. 3. CAMPETHERA vanolosa. 4. GECINUS viridis.
5. HEMILOPHUS leucogaster. 6. BRACHYPTERNUS erythronotus. 7. TIGA tridactyla.

The fourth Subfamily,

GECININÆ, or GREEN WOODPECKERS,

have the Bill more or less long, strong, and straight, with the base broad, and the sides compressed towards the tip, which is truncated and acute; the side sloping, and furnished with a lateral ridge, which springs from above the nostrils, and runs along near the culmen towards the end of the upper mandible for two thirds of its length.

GECINUS. *Boie.**

Bill more or less long, strong, with the base broad, the sides compressed, and the culmen slightly curved towards the tip, which is acute; the lateral ridge runs along near the culmen towards the tip; the lateral margins straight, and the gonys long and ascending; the nostrils basal, and covered by the projecting plumes. *Wings* long and rounded, with the fourth quill the longest. *Tail* moderate and graduated, with the tip of each quill pointed and rigid. *Tarsi* short, and covered with broad scales in front. *Toes* unequal, the outer pair the longest, and nearly equal in length; the claws large, strong, curved, and compressed.

All the species of this genus are found in most parts of the Old World. They reside singly or in pairs in the wooded districts, forests, or jungles; and are usually observed scaling the trunks and branches of the trees, with the assistance of their tail, either in an upright or spiral direction, and if they descend it is generally performed in a backward progress. The strength of their bills enables them to tear off the bark, or form holes in the decayed portions of the branches, for the purpose of discovering the retreats of insects and their larvæ. They occasionally break the shells of nuts for the kernel, on which they feed, when there is a scarcity of their usual food. Their lengthened tongue is covered with a glutinous substance, which occasions insects to adhere to it, especially ants, which some species more usually seek for on the ground. The eggs are deposited on the bare wood, in holes which are formed in decayed trees by means of their bill for a considerable depth. When engaged in this operation the strokes of the bill are given so quickly that the head is hardly observed to move, and the noise this occasions may be heard to a great distance.

1. G. *viridis* (Linn.) Boie, Pl. enl. 879. 371.
2. G. *Karelini* Brandt, Bull. Petersb. x. p. 2.
3. G. *canus* (Gmel.) Boie, Edwards's Birds, pl. 65.—Picus chloris *Pall.*; P. viridi-canus *Meyer*; P. norvegicus *Lath.*; P. viridis *Naum.*; P. caniceps *Nils.*
4. G. *awokera* (Temm.) Pl. col. 585.
5. G. *occipitalis* (Vigors), Proc. Z. S. 1830. p. 8., Gould, Cent. of B. pl. 47. — Picus barbatus *Gray*, Ind. Zool. pl. 31. f. 2.
6. G. *squamatus* (Vigors), Proc. Z. S. 1830. p. 8., Gould, Cent. of B. pl. 48. — Picus dimidiatus *Gray*, Ind. Zool. pl. 29. f. 1., Jard. & Selby, Ill. Orn. pl. 108.
7. G. *flavinucha* (Gould), Proc. Z. S. 1838. p. 120. — Picus (Dryotomus) flavigula *Hodgs.* Journ. A. S. Beng. 1837. p. 106.
8. G. *nipalensis* (Gray), Ind. Zool. pl. 31. f. 1. — Picus mentalis *Jerd.*; P. chlorolophus *Vieill.*?

* Established in 1831 by M. Boie (*Isis*, p. 542.). It is coequal with *Brachylophus* of Mr. Swainson (1837).

9. G. *striolatus* (Blyth), Journ. A. S. B. 1843. p. 1000.
10. G. *viridanus* (Blyth), Journ. A. S. B. 1843. p. 1000.— Picus squamatus *Jerd.*
11. G. *dimidiatus* (Temm.) Boie. — Picus affinis *Raffl.*; P. vittatus *Vieill.*
12. G. *puniceus* (Horsf.) Linn. Trans. xiii. p. 176., Pl. col. 423.
13. G. *miniatus* (Forst.) Ind. Zool. pl. 4., Shaw, Nat. Misc. pl. 413. — Picus malaccensis *Lath.*; P. rubescens *Vieill.* Gray, Illustr. Ind. Zool. pl. 30. f. 1.
14. G. *mentalis* (Temm.) Pl. col. 384.

Campethera.*

Bill long and strong, with the base broad, the culmen slightly curved, and the sides compressed towards the tip, which is acute; the lateral ridge running near the culmen from the base towards the tip, and the gonys moderate, angulous, and ascending; the nostrils basal, lateral, and covered by the projecting plumes. *Wings* long, with the first quill nearly as long as the second, which is the longest. *Tail* moderate and graduated, with the tips of the feathers pointed and rigid. *Tarsi* short, and covered in front with broad scales. *Toes* long, the outer pair unequal, the anterior one the longest; the claws long, strong, curved, and acute.

It is in the continent of Africa that all the species of this genus are found.

1. C. *brachyrhynchus* (Swains.) B. of W. Afr. ii. p. 160.
2. C. *variolosa* (Licht.) — Picus Bennettii *A. Smith.*
3. C. *nubica* (Bodd.) Pl. enl. 667., Le Vaill. Ois. d'Afr. t. 250. — Picus punctatus *Cuv.*; P. notatus *Licht.*
4. C. *punctuligera* (Wagl.) Syst. Avium, Picus sp. 36. — Picus nubicus *Licht.*
5. C. *chrysurus* (Swains.) B. of W. Afr. ii. p. 158.
6. C. *nivosa* (Swains.) B. of W. Afr. ii. p. 162.
7. C. *æthiopica* (Rüpp.) Syst. Uebers. &c. t. 36.

Hemilophus *Swains.*†

Bill long and strong, with the base rather broad; the culmen nearly straight, and the sides compressed towards the tip, which is acute; the lateral ridge running near the culmen towards the tip, and the gonys moderate and ascending; the nostrils basal, lateral, oval, and partly covered by the frontal plumes. *Wings* long and pointed, with the fourth quill the longest. *Tail* long and graduated, with the ends of the feathers pointed and rigid. *Tarsi* short and very stout, and covered in front with broad scales. *Toes* long, strong, and unequal, the outer anterior toe longer than the posterior outer one; the claws large, curved, and much compressed.

These birds are found in India and its archipelago, where they inhabit the deep recesses of the jungles.

1. H. *Lichtensteini* (Wagl.) — Picus modestus *Vigors*, Proc. Z. S. 1831. p. 98.; P. punctatus *Less.*
2. H. *leucogaster* (Reinw.) Wagl. Syst. Avium, Picus sp. 7. — Picus Crawfordii *Gray*, Griff. An. Kingd. ii. p. 513. pl.
3. H. *Hodgsoni* (Jerd.) Madr. Journ. Lit. & Sci. x. p. 215. pl., Illustr. of Ind. Ornith. pl. 5.
4. H. *javensis* (Horsf.) Linn. Trans. xiii. p. 173. — Picus Horsfieldii *Wagl.*
5. H. *Macklotii* (Wagl.) Syst. Avium, Picus sp. 4. — Picus pulverulentus *Temm.* Pl. col. 389.; P. gutturalis *Valenc.*
6. H. *fulvus* (Quoy. & Gaim.) Voy. de l'Astrol. Ois. t. 17.

* This genus was originally established under the name of *Dendromus* by Mr. Swainson (1837), which, having been previously employed, was changed to the above name in 1841.

† Established by Mr. Swainson in 1837 (*Classif. of Birds*, ii. p. 309.).

CELEUS *Boie.**

Bill moderate and strong, with the base broad, the culmen slightly curved; the sides compressed towards the tip, which is acute; the lateral ridge running along near the culmen to the tip, and the gonys moderate, ascending, and angulous; the nostrils basal, lateral, oval, and exposed. *Wings* long and rounded, with the fifth quill the longest. *Tail* long and graduated, with the ends of the feathers pointed and rigid. *Tarsi* short, and covered with broad scales. *Toes* moderate and unequal, with the outer pair longest, and the anterior toe longer than the posterior one; the claws large, curved, and acute.

The species which form this genus are found in the vast forests of the warmer parts of America.

1. C. *flavescens* (Gmel.) Boie, Spix, Av. Bras. t. 49.
2. C. *cinnamomeus* (Gmel.) Pl. enl. 524.
3. C. *citrinus* (Bodd.) Pl. enl. 509. — Picus exalbus *Gmel.*; P. flavicans *Lath.*
4. C. *rufus* (Gmel.) Pl. enl. 694. f. 1.
5. C. *undatus* (Linn.) Edwards's Birds, pl. 332.
6. C. *tumana* (Spix), Av. Bras. t. 47.
7. C. *torquatus* (Bodd.) Pl. enl. 863. — Picus multicolor *Gmel.*; P. scutatus *Wagl.*; P. thoracicus *Less.*
8. C. *ochraceus* (Spix), Av. Bras. t. 51. f. 1.
9. C. *badioides* (Less.) Cent. t. 14.

CHRYSOPTILUS *Swains.*†

Bill long and strong; the base broad and rather depressed, with the culmen slightly curved, and the sides compressed towards the tip, which is acute; the lateral ridge running near the culmen towards the tip, and the gonys short and ascending; the nostrils basal, lateral, and covered by the projecting plumes. *Wings* long and pointed, with the third, fourth, and fifth quills nearly equal and longest. *Tail* long and graduated, with the ends of the feathers pointed and rigid. *Tarsi* short, and covered in front with broad scales. *Toes* long and unequal, the outer pair longest and equal in length; the claws large, curved, and compressed.

It is in the tropical portions of America that the species which compose this genus are found.

1. C. *punctigula* (Bodd.) — Picus cayanensis *Gmel.* Pl. enl. 613.
2. C. *campestris* (Licht.) Swains. Spix, Av. Bras. t. 46.
3. C. *guttatus* (Spix), Swains. Spix, Av. Bras. t. 53. f. 1.
4. C. *melanochloris* (Gmel.) Pl. enl. 719. — Picus cristatus *Vieill.* Azara, No. 252.; B. Buffonii *Temm. & Kuhl.*

BRACHYPTERNUS *Strickl.*‡

Bill long and strong, with the base broad; the culmen slightly curved, and the sides compressed towards the tip, which is acute; the lateral ridge obsolete, and the gonys long, ascending, and angulous;

* Established by M. Boie in 1831 (*Isis*, p. 542.). *Malacolophus* of Mr. Swainson (1831) is coequal.
† Mr. Swainson established this genus in 1831 (*Fauna Boreali Americana*, p. 300.).
‡ Established by Mr. Strickland in 1841 (*Proc. Zool. Soc.* 1841, p. 31.).

the nostrils basal, lateral, and exposed. *Wings* long and pointed, with the fourth quill the longest. *Tail* long and graduated, with the ends of the feathers pointed and rigid. *Tarsi* short, and covered in front with broad scales. *Toes* long and unequal, with the outer anterior toe longer than the posterior one, the inner posterior toe rudimental; the claws long, compressed, and acute.

These birds are found in India and its isles.

1. B. *aurantius* (Linn.) Edwards's Birds, pl. 182., Pl. enl. 995. — Picus bengalensis *Gmel.*; P. nuchalis *Wagl.*; P. hemipodius *Swains.*; P. psarodes *Licht.*

2. B. *erythronotus* (Vieill.) N. Dict. d'Hist. Nat. xxvii. p. 73. — Picus neglectus *Wagl.*

Tiga *Kaup.**

Bill long and strong, with the culmen slightly curved, and the sides compressed towards the tip; the lateral ridge slightly apparent, running near the culmen towards the tip, and the gonys moderate, ascending, and angulous; the nostrils basal, lateral, and exposed. *Wings* long and pointed, with the fourth and fifth nearly equal and longest. *Tail* long and graduated, with the ends of the feathers pointed and rigid. *Tarsi* short, and covered in front with broad scales. *Toes* long and unequal, with the anterior outer toe rather longer than the posterior outer one, the inner posterior toe entirely wanting; the claws large, compressed, and acute.

It was in the Island of Java that the typical species of this genus was found; but species have since been ascertained to extend to the continent of India.

1. T. *tridactyla* (Swains.) — Picus tiga *Horsf.* Linn. Trans. xiii. p. 177., Gray, Illustr. Ind. Zool. pl. 30. f. 2.
2. T. *Rafflesii* (Vigors), App. Mem. Raffl. p. 669.
3. T. *Grantia* (M'Clell.) Proc. Z. S. 1839. 165.
4. T. *Shorei* (Vigors), Proc. Z. S. 1831. p. 175., Gould, Cent. of B. pl. 49.
5. T. *amictus* (Gray).

* Established by Dr. Kaup in 1836. It is coequal with *Chrysonotus* of Mr. Swainson (1837).

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CHLORONERPES
rubiginosus. Swains.

C.Hullmandel's Patent Lithotint.

Hullmandel & Walton, Lithographers.

1. MELANERPES torquatus. 2. LEUCONERPES dominicanus. 3. CENTURUS carolinensis. 4. CHLORONERPES polyzonus.

The fifth Subfamily,

MELANERPINÆ, or BLACK WOODPECKERS,

have the Bill more or less long, compressed, and the lateral ridge placed nearly half-way between the culmen and lateral margins.

CENTURUS *Swains.**

Bill more or less long, and rather slender, with the culmen gradually curved, and the sides compressed to the tip, which is acute; the lateral margins slightly curved, and the gonys long and angular; the nostrils basal, rounded, and the opening partly covered by projecting plumes. *Wings* long and pointed; with the first quill very short, and the fourth and fifth the longest. *Tail* rather long, and with the ends of the feathers pointed. *Tarsi* short, and covered with transverse scales. *Toes* unequal; the outer pair the longest, and equal: the claws long, compressed, and acute.

It is in both North and South America that these birds are found singly on the decayed trees of the forests, and occasionally in orchards or open fields. They are expert climbers, moving about the trunks and horizontal branches of the trees with equal facility in all directions, searching for larvæ and perfect insects. Their note is "*chow*," rapidly repeated, and reminded Wilson of the barking of a little lapdog. They form their nests in the decayed or solid trunks of trees; the female deposits five eggs, and the young generally climb to the upper branches of the trees before they are able to fly, and are there fed by the parents until they can provide for themselves.

1. C. *carolinus* (Linn.) Pl. enl. 692., Wils. Amer. Orn. pl. 7. f. 2. — Picus griseus *Vieill.* Ois. d'Amér. Sept. t. 116.; P. erythrauchen *Wagl.*; Centurus carolinensis *Swains.*; P. zebra *Bodd.* Audub. B. of Amer. pl. 415. f. 3.
2. C. *radiolatus* (Wagl.) Edwards's Birds, pl. 244., Pl. enl. 597.
3. C. *striatus* (Bodd.) Pl. enl. 281. & 614., Vieill. Ois. d'Amér. Sept. t. 14.
4. C. *flaviventris* Swains. Two Cent. and a Quart. p. 354.
5. C. *rubriventris* Swains. Two Cent. and a Quart. p. 354.
6. C. *elegans* Swains.
7. C. *subelegans* Pr. Bonap. Proc. Zool. Soc. 1837. p. 109.
8. C. *Santa Cruzi* Pr. Bonap. Proc. Zool. Soc. 1837. p. 116.
9. C. *flavifrons* (Vieill.) Swains. Spix, Av. Bras. t. 25. f. 2. — Type of Tripsurus *Swains.* (1837).
10. C. *hirundinaceus* (Gmel.) Pl. enl. 694. f. 2. — P. rubrifrons *Spix*, Av. Br. t. 55. f. 2.
11. C. *rubrifrons* Spix, Av. Br. t. 55. f. 1.
12. C. *chlorolophos* (Vieill.) N. Dict. d'Hist. Nat. xxvi. p. 78.

* Established by Mr. Swainson in 1837 (*Class. of Birds*, ii. p. 310.). It embraces *Tripsurus* of Mr. Swainson (1837).

Chloronerpes *Swains.**

Bill rather short, with the culmen gradually curved, and the sides compressed to the tip, which is acute; the lateral margins nearly straight, and the gonys moderate and ascending; the nostrils basal, and covered with the projecting plumes. *Wings* long and pointed; with the first quill short, and the fourth and fifth the longest. *Tail* moderate and graduated, with the ends of the feathers pointed. *Tarsi* short, and covered in front with transverse scales. *Toes* unequal, and the outer pair the longest, with the posterior rather shorter than the anterior: the claws long, much compressed, and acute.

It is in the tropical parts of America that the species of this genus are found.

1. C. *aurulentus* (Licht.) Pl. col. 59. f. 1. — Picus chrysochloros *Vieill.*; P. brasiliensis *Swains.* Zool. Ill. pl. 20.; P. macrocephalus *Spix*, Av. Bras. t. 53. f. 2., Azara, No. 256.
2. C. *xanthotænia* (Wagl.) Azara, No. 257. — Picus auratus *Vieill.*
3. C. *maculipennis* (Licht.) Syst. Av. sp. 51.
4. C. *icterocephalus* (Lath.) Pl. enl. 784. — Picus chlorocephalus *Gmel.* Spix, Av. Bras. t. 54. f. 2.
5. C. *erythrops* (Vieill.) — Picus icterocephalus var. *Lath.* Spix, Av. Bras. t. 54. f. 1.
6. C. *fasciatus* (Lath.).
7. C. *flavicollis* (Vieill.) N. Dict. d'Hist. Nat. xxvi. p. 74.
8. C. *squamosus* (Vieill.) N. Dict. d'Hist. Nat. xxvi. p. 74.
9. C. *maculatus* (Vieill.) N. Dict. d'Hist. Nat. xxxi. p. 91. Azara, No. 259.
10. C. *spilogaster* (Wagl.) Azara, No. 258.
11. C. *polyzonus* (Temm.).
12. C. *rufoviridis* (Malh.) Rev. Zool. 1845. p.
13. C. *Kirkii* (Malh.) Rev. Zool. 1845. p.
14. C. *affinis* Swains. Zool. Ill. p. 78. — Picus ruficeps *Spix*, Av. Bras. t. 56. f. 3.
15. C. *rubiginosus* Swains. Zool. Illustr. pl. 14.

Melanerpes *Swains.*†

Bill rather long, broad at the base, with the culmen sloping, and the sides compressed to the tip, which is acute; the lateral margins nearly straight, and the gonys long and ascending; the nostrils basal, rounded, and much covered by the projecting plumes and bristles. *Wings* long; with the first quill short, and the third nearly as long as the fourth, which is rather the longest. *Tail* long, with the ends of the feathers pointed. *Tarsi* short, and covered with transverse scales. *Toes* unequal; the outer pair the longest, and equal: the claws moderate, much compressed, and acute.

These birds are found in both North and South America. They are seen in the woods, the orchards, and even on the fences in the neighbourhood of houses. Their chief food consists of insects, but they commit great devastation on fruits, berries, and Indian corn, and they enter the dovecots for the purpose of sucking the eggs of the pigeons. Their note is shrill and lively, and so much resembles, says Wilson, that of a species of tree frog which frequents the same trees, that it is sometimes difficult to distinguish the one from the other. They migrate during the night

* Established by Mr. Swainson in 1837 (*Class. of Birds*, ii. p. 307.).
† Mr. Swainson established this genus in 1831 (*Fauna Boreali-Americana*, p. 316.).

from north to south, flying high above the trees, far apart, propelling themselves, says Mr. Audubon, by reiterated flaps of their wings, at the end of each successive curve which they describe in their flight. At the dawn of day the whole alight on the tops of the dead trees about the plantations, and remain in search of food until the approach of sunset, when they again, one after another, mount the air, and continue their journey. The nest is formed in the trunk or large branches of a tree. The female deposits on the bare wood generally six eggs.

1. M. *erythrocephalus* (Linn.) Swains. Pl. enl. 117., Audub. B. of Amer. pl. 27.
2. M. *torquatus* (Wils.) Pr. Bonap. Amer. Orn. pl. 20. f. 3., Audub. B. of Amer. pl. 416. f. 7, 8.
3. M. *ruber* (Gmel.) Pr. Bonap. Audub. B. of Amer. pl. 421. — Picus flaviventris *Vieill.*
4. M. *rubidicollis* (Vieill.) Ois. d'Amér. Sept. t. 117. — Picus portoriensis *Daud.* Mus. d'Hist. Nat. ii. t. 51.
5. M. *formicivorus* Swains. — Picus melanopogon *Licht.* Pl. col. 451.
6. M. *meropirostris* (Wagl.) Pr. Bonap. Syst. Avium. sp.

Leuconerpes *Swains.**

Bill long, and broad at the base, with the culmen gradually sloping, and the sides compressed to the tip, which is acute; the lateral margins curved, and the gonys long and ascending; the nostrils basal, rounded, and slightly covered with projecting bristles. *Wings* long and pointed; with the first quill short, and the third and fourth equal and longest. *Tail* long and graduated, with the ends of the feathers long and pointed. *Tarsi* short, and covered with transverse scales. *Toes* unequal, the outer pair the longest, and the anterior toe rather longer than the posterior one: the claws large, compressed, and acute.

This species is found in the tropical portions of America.

L. *dominicanus* (Vieill) Spix, Av. Bras. t. 50. — Picus candidus *Otto;* P. melanopterus *Pr. Neuw.*; P. bicolor *Swains.* Zool. Ill. n. s. pl. 38.

* Established in 1837 by Mr. Swainson in his *Class. of Birds,* ii. p. 310.

September, 1846.

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C.Hullmandel's Patent Lithotint.

COLAPTES
rubricatus. (*Licht.*)

The sixth Subfamily,

COLAPTINÆ, or Ground Woodpeckers,

have the Bill broad at the base, and the sides compressed to the end, with the culmen much curved to the tip, which is acute; the sides of the upper mandible sloping, and the lateral ridge scarcely visible or entirely wanting.

Colaptes *Swains.**

Bill long, rather slender, broad at the base, and narrowed towards the end, with the culmen elevated at the base, and curved to the tip, which is rather acute; the lateral margins slightly curved, and the gonys angulated, and curved upwards to the end of the lower mandible; the nostrils basal, lateral, and covered by the projecting plumes. *Wings* long, with the first quill short, and the fourth and fifth the longest. *Tail* rather long, graduated, and the ends of the feathers narrowed and rigid. *Tarsi* short, robust, and covered with broad scales. *Toes* unequal; the outer anterior toe longer than the outer posterior one: the claws moderate, compressed, and acute.

These birds are found in North and South America, the Islands of the West Indies, and South Africa. They are observed on the ground, examining the manure of cattle for the insects that live within, or turning over the hillocks formed by ants, which insects form their chief and favourite food. They occasionally frequent trees, for those ants that build their nests on them; and they penetrate the dead and decayed branches, for the woodlice and larvæ of insects that inhabit such places. Fruits do not escape the attacks of these birds when ripe, as well as seeds and grains. Their flight is strong and prolonged, propelling themselves by numerous beats of the wings, with short intervals of sailing, during which they generally keep in a straight line. The nature of their chief food causes them to migrate from place to place as it becomes scarce in the locality which they have occupied. The eggs, which are usually six in number, are deposited in holes of trees, on the chips and dust of the wood. The young soon leave the nest, and are enticed by the parents to the higher branches, and there fed by them.

1. C. *auratus* (Linn.) Swains. Pl. enl. 693., Wils. Amer. Orn. pl. 3. f. 1., Audub. B. of Amer. pl. 37.
2. C. *brasiliensis* Swains.
3. C. *rubricatus* (Licht.) Pr. Bonap. — Colaptes mexicanus *Swains.*; C. collaris *Vigors*, Beechey's Voy. Zool. pl. 19., Audub. B. of Amer. pl. 416. f. 5.
4. C. *pitiguus* (Mol.) — Picus chilensis *Less.* Voy. de la Coqu. t. 32.; P. cuculinus *Licht.*
5. C. *Fernandinæ* Vigors, Zool. Journ. iii. p. 445., Voy. l'Ile de Cuba, Ois. t. 24.
6. C. *superciliosus* Vigors, Zool. Journ. iii. p. 445., Voy. l'Ile de Cuba, Ois. t. 23. (var. alba).
7. C. *mexicanoïdes* Lafr. Rev. Zool. 1844. p. 42.
8. C. *elegans* Fr. Proc. Z. S. 1840. p. 60. — Picus Rivoli *Boiss.*
9. C. *Ayresii* Audub. B. of Amer. 2. edit. pl. 494.
10. C. *rupicola* D'Orb. Voy. dans l'Amér. Mér. Ois. t. 62. f. 1.
11. C. *olivaceus* (Lath.) Steph. Le Vaill. Ois. d'Afr. t. 254. — Picus arator *Cuv.*; Geocolaptes terrestris *Burch.*; Type of Geocolaptes *Burch.* (1831).

* Established by Mr. Swainson in 1827 (*Zool. Journ.* iii. p. 353.). It embraces *Geocolaptes* of Dr. Burchell.

MEIGLYPTES *Swains.**

Bill rather short, strong, broad, and elevated at the base, with the culmen curved, and sides compressed towards the tip, which is acute; the lateral margins slightly curved; the gonys long, angulated, and ascending; the nostrils basal, lateral, exposed, small, and oval. *Wings* long; with the first quill short, and the fourth and fifth nearly equal and longest. *Tail* moderate, graduated, and the ends of the feathers acute. *Tarsi* short, strong, and covered in front with broad scales. *Toes* unequal; with the two outer toes equal and longest, and the inner posterior toe more or less short: the claws moderate, compressed, and acute.

It is in India and its archipelago that the birds which form this division are found. Dr. Packman kindly informs me that they inhabit singly the thick woods and jungles, and are often heard tapping the solid trunks of trees, the sound of which is so loud that it reechoes through the forest for some distance. The tapping causes a jarring sensation to the tree, which puts the colony of tree ants in a commotion, and they instantly quit their hiding-places to escape the danger that awaits them, carrying in their mouths their eggs and larvæ; and the bird, who is on the watch outside, devours them as they approach within reach of his tongue. They also attack the hillocks formed on the ground, for the ants that inhabit them.

1. M. *tristis* (Horsf.)— Picus poicilophus *Temm.* Pl. col. 197. f. 1.
2. M. *brunneus* Eyton, Proc. Z. S. 1839. p. 106.— Picus tukki *Less.*; P. luridus *Nitzsch.*
3. M. *brachyurus* (Vieill.)— Picus badius *Raffl.*; P. rufus *Gray*, Ill. Ind. Zool. i. pl. 29. f. 2.

* Established by Mr. Swainson in 1837 (*Classification of Birds*, ii. p. 309.).

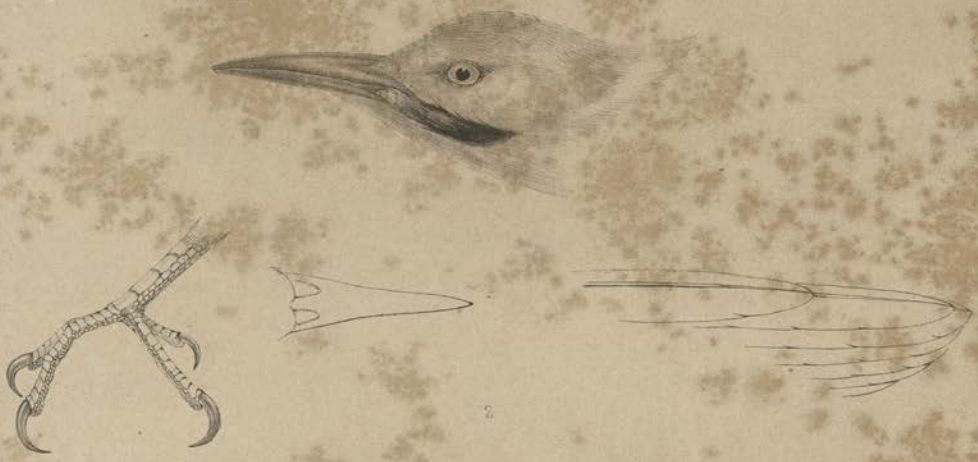
August, 1846.

H.C.Richter del.

Hullmandel & Walton Lithographers.

YUNX
pectoralis Vigors.

1



2

YUNCINÆ.

3

Ballman del & Walton Lithographers

1. MEIGLYPTES tristis 2. COLAPTES auratus 3. YUNX torquilla.

The seventh Subfamily,

YUNCINÆ, or WRYNECKS,

have the Bill short, straight, with the tip acute ; the Wings moderate and pointed ; the Tail moderate, rounded, and composed of soft and flexible feathers ; the Tarsi short ; and the Toes moderate.

YUNX *Linn.**

Bill short, straight, with the culmen slightly sloping to the tip, which is rather acute, and the gonys of the lower mandible moderate, and advancing upwards; the nostrils basal, lateral, partly closed by a membrane, and hidden by the frontal plumes. *Wings* moderate, pointed, with the first quill rather shorter than the second, which is the longest. *Tail* moderate, rounded, and composed of soft and flexible feathers. *Tarsi* short, partly clothed with feathers, but mostly covered with broad scales. *Toes* moderate, the two anterior ones united at the base by a membrane.

The birds that compose this genus are found in various parts of Europe, India, and Africa. In the former at least they appear when the vernal sun calls forth the ants from the state of hybernation, as the principal part of their food consists of these insects and their eggs. They obtain them by removing the earth with their bill, and then inserting their long extensile tongue, to which the insects adhere by means of a gluten that nature has provided for that purpose. They are rarely seen on trees, as their soft tail does not possess sufficient power to support their weight while seeking their food in such places. The nest is built in holes of trees, and the female deposits from eight to ten eggs.

1. Y. *torquilla* Linn. Pl. enl. 698.
2. Y. *pectoralis* Vigors, Proc. Z. S. 1831. 98., Mag. de Zool. 1835. Ois. t. 33. — Yunx ruficollis *Licht.*
3. Y. *æquatorialis* Rüpp. Mus. Senck. iii. 121., Ornith. Faun. von Nord-Ost. Afr. t. 37.

* Established by Linnæus in his *Systema Naturæ* (1748).

November, 1845.

Edin.ª and J. Walton, lithographers.

INDICATOR
maculatus G. R. Gray

Order III. SCANSORES.

The fourth Family,

CUCULIDÆ, or Cuckows,

have the Bill of various lengths, generally slender, and more or less compressed on the sides; the culmen curved to the tip, which is more or less emarginated; the Nostrils lateral, and placed in a membranous groove: the Wings long, and generally pointed: the Tail lengthened and rounded: the Tarsi more or less long, and covered with broad transverse scales: the Toes long and unequal: the Claws moderate, and more or less curved.

The first Subfamily,

INDICATORINÆ, or Honey-Guides,

have the Bill short, broad at the base, with the culmen curved, and the sides compressed to the tip, which is entire; the Nostrils lateral, and placed near the culmen in a membranous groove: the Wings long and pointed: the Tail moderate and emarginated: the Tarsi very short, and covered with transverse broad scales: the Toes unequal, and the outer anterior toe the longest: the Claws moderate and strong.

Indicator *Vieill.**

Bill more or less short, and broad at the base, with the culmen curved, and the sides compressed to the tip, which is entire; the lateral margins nearly straight; the gonys moderate and ascending; the nostrils lateral, and placed in a membranous groove, with the opening linear, and near the culmen. *Wings* long and pointed; with the first quill nearly as long as the third, fourth, and fifth, which are equal and longest. *Tail* moderate, emarginated in the middle, and rounded on the sides. *Tarsi* shorter than the outer anterior toe, and covered with broad scales. *Toes* unequal, the outer anterior toe the longest, the anterior pair united at their base; the claws moderate, compressed, and curved.

* Established by Vieillot in 1816 (*Analyse*, p. 28.). *Prodotes* of Nitzsch is synonymous.

INDICATORINÆ.

The species of this genus inhabit the wooded districts of Africa, and the forests of India and the Island of Borneo. They are usually observed in pairs in the neighbourhood of nests of wild bees, which are formed in the trunks of trees. The honey stored up by these insects is the chief food of the birds, who often pay dearly for attacking the nest, being sometimes found dead in the hives, having been stung to death, in which case the bees cover in the body with a vault of wax, that they may not be incommoded by its presence. Their flight is heavy, and continued only for a short distance at a time. They utter a continued cry, which makes them easy of discovery. The nest is formed in the holes of trees. The female deposits three or four eggs, and the male assists in the hatching.

1. ? I. *Sparmanni* Shaw. — Cuculus indicator *Linn.* Mill. Cim. Phys. pl.

2. I. *major* Shaw, Gen. Zool. ix. p. 139. pl. 27., Levaill. Ois. d'Afr. t. 241.; Gal. des Ois. t. 46.—I. flavicollis *Swains.*; I. Levaillantii *Leadb.*

3. I. *Levaillantii* Temm. Pl. col. (description).

4. I. *minor* Shaw, Gen. Zool. ix. p. 140., Levaill. Ois. d'Afr. t. 242. — Indicator minimus *Temm.* Pl. col. 542. f. 2.; I. diadematus *Rüpp.*; I. buphagoides *Leadb.*

5. I. *maculatus* G. R. Gray. — Indicator Sparmanni *Leadb.* Linn. Trans. xvi. p. 91.

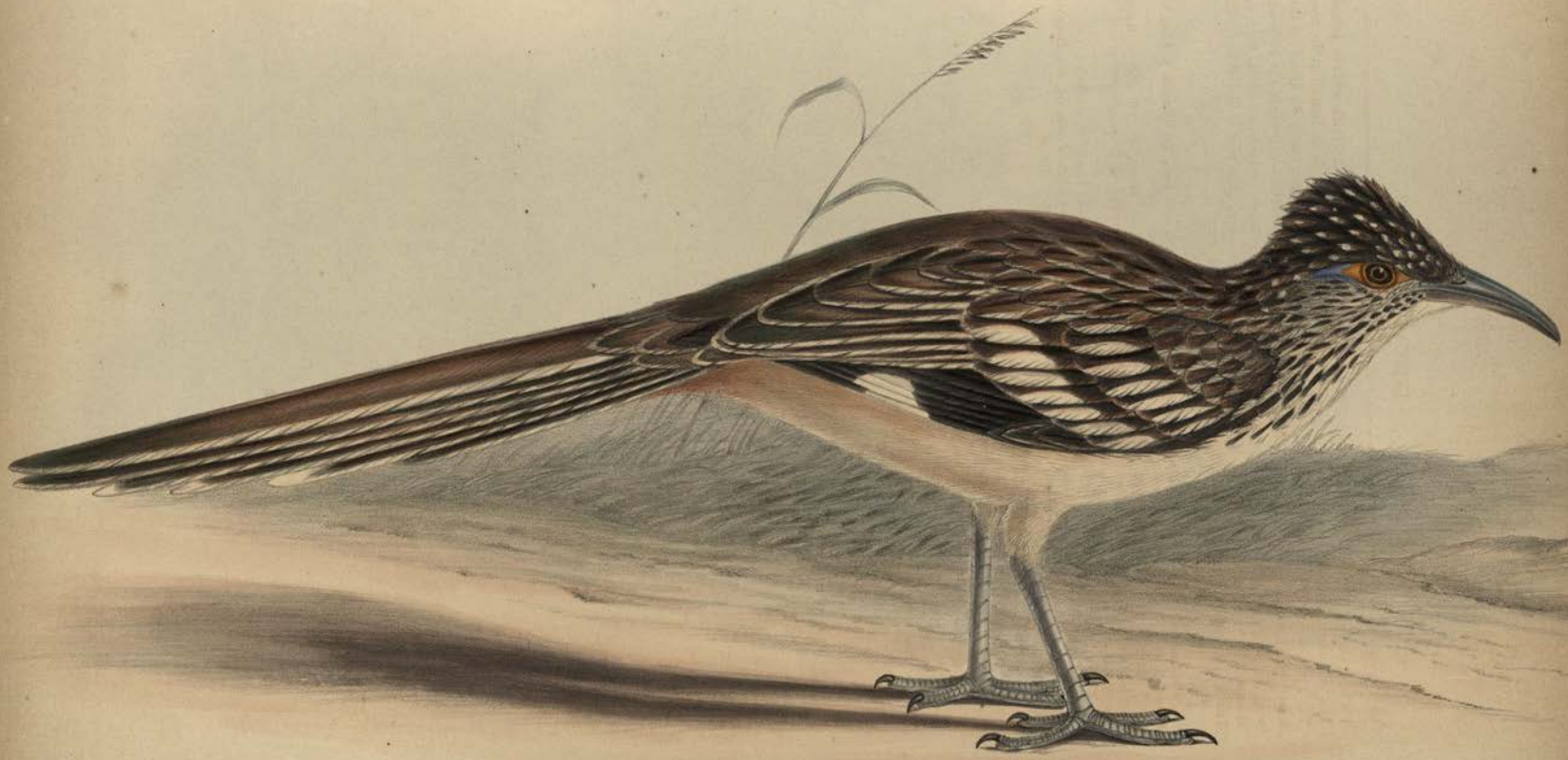
6. ? I. *variegatus* Less. Tr. d'Ornith. p. 155., Guer. Iconogr. Ois. t. 32. f. 2.

7. I. *albirostris* Temm. Pl. col. 367. — Indicator albicollis *Leadb.*; I. flavicollis et I. leucotis *Swains.*; I. flaviscapulatus *Rüpp.* ?

8. I. *archipelagicus* Temm. Pl. col. 542. f. 1.

9. I. *xanthonotus* Blyth, Journ. As. Soc. Beng. 1841. p. 928., 1842. p. 166., 1843. p. 942. pl.

March, 1847.



GEOCOCCYX
affinis Wagler

Hullmandel & Walton Lithographers

FALCONER TESTIMONIAL

1. INDICATOR major. 2. GEOCOCCYX viridis. 3. SAUROTHERA vetula.

The second Subfamily,

SAUROTHERINÆ, or GROUND CUCKOWS,

have the Bill long; with the culmen nearly straight towards the tip, which is suddenly curved and hooked; the sides much compressed; and the gonys long, and slightly ascending; the nostrils lateral, and partly exposed: the Wings moderate and rounded: the Tail lengthened and graduated: the Tarsi more or less long, and covered in front with transverse scales: the Toes more or less unequal: the Claws moderate, curved, and acute.

SAUROTHERA *Vieill.**

Bill longer than the head, rather slender, and straight, with the culmen slightly sloping towards the tip, which is suddenly curved and hooked, and the sides much compressed; the gonys long, and slightly ascending; the nostrils lateral and basal, with the opening oval and partly covered by a membrane. *Wings* moderate and rounded; with the fourth, fifth, and sixth quills equal and longest. *Tail* lengthened, broad, and graduated. *Tarsi* short, rather slender, as long as the outer anterior toe, and covered in front with broad scales. *Toes* rather long; the outer lateral toes equal, and longest; the claws moderate, compressed, curved, and acute.

It is in the islands of the West Indies and South America that the species of this genus are found. They frequent the woods and hedges throughout the year, feeding on seeds, small worms, and caterpillars. They are said to attack small snakes, frogs, young rats, and sometimes small birds. When seen on the ground, their progressive movement is usually by leaps. Their flight is weak and short, extending only from bush to bush.

1. S. *vetula* (Gmel.) Vieill. Pl. enl. 772. | 2. S. *Merlini* D'Orb. Voy. l'Ile de Cuba, Ois. t. 25. f. 1.

GEOCOCCYX *Wagl.*†

Bill as long as, or longer than, the head, with the culmen slightly sloping to near the tip, which is suddenly curved and hooked; the sides much compressed; the gonys rather long and ascending; the nostrils lateral and basal, with the opening rather oval, and covered by a membrane. *Wings* moderate

* Established by Vieillot in 1816.
† Wagler established this genus in 1831. *Leptostoma* of Mr. Swainson (1837 ?) is synonymous.

and rounded; with the fifth, sixth, and seventh quills equal and longest. *Tail* lengthened, broad, and graduated. *Tarsi* longer than the outer anterior toe, strong, and covered in front with broad scales. *Toes* unequal, the anterior outer longer than the posterior outer toe; the claws moderate, curved, and acute.

The species inhabit California and Mexico; they frequent dry places covered with bushes, under which they hide, and quickly disappear as soon as they perceive the least danger. From the weakness of their wings they are rarely seen otherwise than on the ground, upon which they run with great rapidity, carrying their tails erect, which gives them a singular appearance: they are said only to use their wings in assisting them to leap over any obstacle they may meet with in their progress. The food of these birds consists of reptiles, insects, and small quadrupeds.

1. G. *viatica* (Licht.)—Diplopterus viaticus *Boie*, Isis, 1831. p. 54.; Geococcyx variegata, *Wagl.* Isis, 1831. p. 524.; Saurothera marginata *Wagl.* Isis, 1832. 991. t. 26.; S. Bottæ *Blainv.*; S. californiana *Less.* Ann. du Mus. 1835. t. 9.; Leptostoma longicauda *Swains.*

2. G. *affinis* Hartl. Rev. Zool. 1844. p. 215.

3. G. *velox* Karwinski, Munch. Gel. Anzeig. iii. 1836. p. 95.

4. G. *mexicanus* (Gmel.) Strickl.

May, 1847.

C.Hullmandel's Patent Lithogm.

COUA
ruficeps G.R.Gray.

C. Hullmandel's Patent Lithotint.

1. DIPLOPTERUS guira. 2. COUA cristata. 3. COCCYZUS americanus. 4. CENTROPUS senegalensis.
5. CULTRIDES Geoffroyi. 6. PIAYA cayana.

The third Subfamily,

COCCYZINÆ, or GROUND CUCKOWS,

have the Bill generally elevated at its base, with the culmen arched, and the sides much compressed to the tip, which is entire; the gonys usually long and straight; the nostrils basal, with the opening generally linear, and partly closed by a scale; the Wings moderate, and more or less rounded; the Tail long and graduated; the Tarsi lengthened, and covered with broad scales; the Toes unequal, and armed with various-sized claws.

COUA *Cuv.**

Bill moderate, with the culmen more or less curved, and the sides compressed to the tip, which is entire; the lateral margins curved, and the gonys long and ascending; the nostrils basal, sunk in a broad short groove, with the opening anterior, linear, and oblique. *Wings* moderate, and much rounded; with the fifth, sixth, and seventh quills equal and longest. *Tail* long, broad, and much rounded on the sides. *Tarsi* longer than the middle toe, and covered in front with broad scales. *Toes* unequal; and armed with moderate, compressed, curved, acute claws.

It is in Madagascar, and on the eastern side of the continent of Africa, that the species of this genus are found.

1. C. *gigas* (Bodd.) Pl. enl. 815. — Cuculus madagascariensis *Gmel.*; Coccyzus virescens *Vieill.*
2. C. *cærulea* (Linn.) Pl. enl. 295. f. 2., Le Vaill. Ois. d'Afr. t. 218., Gal. des Ois. t. 41.
3. C. *cristata* (Linn.) Pl. enl. 589., Le Vaill. Ois. d'Afr. t. 217.
4. C. *Serriana* (Pucher.) Rev. Zool. 1845. p. 51.
5. C. *Reyaudi* (Pucher.) Rev. Zool. 1845. p. 51.
6. C. *ruficeps* G. R. Gray.
7. C. *Delalandi* Temm. Pl. col. 440.

CENTROPUS *Illig.*†

Bill short, elevated at the base, with the culmen much curved, and the sides much compressed to the tip, which is entire; the lateral margins much curved, and the gonys long and straight; the nostrils sunk in a short broad groove, with the opening anterior, linear, oblique, and partly closed by a membranous scale. *Wings* rather long, and much rounded; with the fourth, fifth, and sixth quills

* Established by Cuvier in 1817 (*Règne Animal*, i. p. 454.). *Serisomus* of Mr. Swainson (1837) is coequal.

† Illiger established this genus in 1811 (*Prodromus*, &c. p. 205.). *Polophilus* of Leach (1814) and *Corydonix* of Vieillot (1816) are synonymous.

equal and longest. *Tail* long, broad, and rounded on the sides. *Tarsi* as long as the middle toe, strong, and covered in front with very broad scales. *Toes* unequal, the anterior outer one the longest; the inner posterior toe armed with a long straight claw.

These birds reside in the warmer parts of the world, where they are generally found on the ground, singly or in pairs, usually searching among the thorny bushes for their food, which consists of reptiles and various kinds of insects. At certain seasons they retire to the jungles or woods, where they are observed perched on the branches seeking for the fruits that are found on them. They emit a mournful sound, which in one species has been compared to that of "*oo-oo*" frequently repeated.

1. C. *senegalensis* (Linn.) Pl. enl. 332. — Cuculus ægyptius *Gmel.* Hist. de l'Egypt, t. 4. f. 1., Le Vaill. Ois. d'Afr. t. 219., Swains. B. of W. Afr. pl. 20.
2. C. *rufinus* Cuv. Règ. An. i. p. 426., Le Vaill. Ois. d'Afr. t. 221. — Polophilus rufus *Steph.*
3. C. *philippensis* Cuv. Pl. enl. 824. — Cuculus ægyptius var. β *Lath.*; Corydonix pyrrhopterus *Vieill.*; Polophilus sinensis *Steph.*; Centropus bubutus *Horsf.* Zool. Res. pl.
4. C. *nigrorufus* Cuv. Le Vaill. Ois. d'Afr. t. 220. — Corydonix bicolor *Vieill.*
5. C. *affinis* Horsf. Linn. Trans. xiii. p. 240. — Centropus lepidus *Horsf.*; C. pumilus *Less.*
6. C. *benegalensis* (Gmel.) Brown's Ill. pl. 13. — Corydonix maculatus *Vieill.*
7. C. *superciliosus* Rüpp. Faun. t. 21. f. 1.
8. C. *monachus* Rüpp. Faun. t. 21. f. 2.
9. C. *Burchellii* Swains. Two Cent. and a Quart. p. 321.
10. C. *dimidiatus* Bl. Journ. As. Soc. Beng. 1843. p. 945.
11. C. *phasianus* (Lath.) Lamb. Icon. ined. i. 36., Leach, Zool. Misc. pl. 46. — Type of Polophilus *Leach* (1816).
12. C. *variegatus* (Leach), Leach, Zool. Misc. pl. 51. — Centropus gigas *Cuv.* Le Vaill. Ois. d'Afr. t. 223. — Corydonix giganteus *Vieill.*
13. C. *leucogaster* (Leach), Leach, Zool. Misc. pl. 52. — Polophilus Lathami *Leach*, Zool. Misc. pl. 56.
14. C. *melanorhynchus* (Bodd.) Pl. enl. 295. f. 1. — Cuculus Tolu *Gmel.*
15. C. *affinis* Less. Tr. d'Orn. p. 136.
16. C. *æthiops* Cuv. Règ. An. i. p. 426., Le Vaill. Ois. d'Afr. t. 222. — Corydonix nigerrimus *Vieill.*; Polophilus maurus *Steph.*
17. C. *viridis* (Scop.) Del. Flor. et Faunæ Insubricæ, Sonn. Voy. t. 80.
18. C. *violaceus* Quoy et Gaim. Voy. de l'Astrol. Ois. t. 19.
19. C. *celebensis* Quoy et Gaim. Voy. de l'Astrol. Ois. t. 20.
20. C. *menebiki* Garn. Voy. de la Coqu. t. 34.
21. C. *ateralbus* Less. Voy. de la Coqu. t. 33.
22. ? C. *bicolor* Less. Tr. d'Orn. p. 137.
23. ? C. *melanops* Less. Tr. d'Orn. p. 137.

CULTRIDES.*

Bill moderate, elevated at the base, with the culmen much curved, and the sides much compressed to the tip, which is entire; the lateral margins curved, and the gonys long and straight; the nostrils large, with the opening lunate, and covered by a large bony scale. *Wings* short and much rounded; with the seventh, eighth, and ninth quills equal and longest. *Tail* very long, broad, and much rounded. *Tarsi* longer than the middle toe, and covered in front with broad scales. *Toes* unequal; and the claws short, compressed, and slightly curved.

The type of this genus is found in the warmer parts of South America.

C. *Geoffroyii* (Temm.) Pucher. Pl. col. 7.

* Established by M. Pucheron in 1845 (*Rev. Zool.* p. 51.).

Diplopterus *Boie.**

Bill more or less long and slender, with the culmen curved, and the sides compressed to the tip, which is entire; the lateral margins curved, and the gonys long and ascending; the nostrils basal, with the opening lengthened, linear, and covered by a scale. *Wings* long; with the fourth quill nearly as long as the fifth, which is the longest. *Tail* lengthened, broad, and rounded on the sides. *Tarsi* of the length of the middle toe, rather slender, and covered in front with broad scales. *Toes* unequal and slender; the claws very short, curved, and acute.

These birds are found in the tropical parts of South America, inhabiting dense forests. They feed on grasshoppers and small lizards. One of the species is stated to live so solitary a life, except at the breeding season, that individuals are not to be found at a less distance than half a league from each other. On the other hand, it is said that the flocks of two other species are frequently found mingled together, and the females even build a large nest in common, in which they all deposit their eggs, hatch them together, and bring up the young as if they were all of the same species. They emit various cries, which have been compared in the different species to "*pirirriri*," accompanied by a kind of laugh, "*guaagua*," with a crying tone, "*chochi*," &c.

1. D. *guira* (Gmel.) Voy. de l'Uranie, Ois. t. 26. — Crotophaga piririgua *Vieill.* Gal. des Ois. t. 44., Guer. Iconogr. Ois. t. 31.
2. D. *brasilianus* (Less.) Rev. Zool. 1839. p. 41.
3. D. *nævius* (Linn.) Boie, Pl. enl. 812.
4. D. *chochi* (Vieill.) N. Dict. d'Hist. Nat. viii. p. 272., Azara, 266.
5. D. *phasianellus* (Spix), Av. Bras. t. 42.

Piaya *Less.*†

Bill moderate, broad at the base, with the culmen curved, and the sides compressed to the tip, which is entire; the lateral margin curved, and the gonys long and nearly straight; the nostrils sunk in a broad short groove, with the opening anterior, oblique, and suboval. *Wings* long and rounded; with the fifth, sixth, and seventh quills equal and longest. *Tail* lengthened, broad, and graduated. *Tarsi* as long as the middle toe, and covered in front with broad scales. *Toes* unequal and rather slender; the claws long, compressed, and curved.

The species of this genus are peculiar to the warmer portions of America, where they reside in pairs in the open plantations, searching among the foliage for the larvæ and insects that live on the leaves. They are rarely, if ever, seen on the ground, though occasionally observed on the lower branches, especially those that hang over the water, as such places are generally prolific in insects. When perched, they are said to be continually moving their tails, and changing their position. They are believed to lay two eggs.

* Spix first established this division under the name of *Macropus*, which word having been previously used in Zoology, I have adopted that given above. *Dromococcyx* of the Prince Neuwied is probably a synonyme. It embraces *Guira* of M. Lesson (1831), with which *Octopteryx* of M. Kaup (1836), and *Ptiloleptus* of Mr. Swainson (1837) are synonymous.

† Established by M. Lesson in 1831 (*Traité d'Ornithologie*, p. 139.). *Coccycua* of the same author is synonymous.

1. P. *cayana* (Linn.) Pl. enl. 211. — Coccyzus macrocercus *Vieill.*; C. cayanensis *Swains.*
2. P. *minuta* (Vieill.) Ency. Méth. p. 1346., Briss. Orn. iv. t. 16. f. 2. — Cuculus cayanus β *Lath.*
3. P. *brachyptera* (Less.) — Cuculus cayanus var. γ *Lath.*; Macropus caixana *Spix*, Av. Bras. t. 43.
4. P. *chrysogaster* (Cuv.) Less. Tr. d'Orn. p. 140.
5. P. *erythrorhyncha* (Cuv.) Less. Tr. d'Orn. p. 141.
6. P. *ferruginea* (Gould), Proc. Z. S. 1843. p. 105., Voy. of Sulphur, Birds, pl.
7. P. *erythropygia* Less. Rev. Zool. 1842. p. 209.
8. P. *rutila* (Vieill.) N. Dict. d'Hist. Nat. viii. p. 277. — Cuculus monachus *Cuv.*; Type of Coccycua *Less.* (1831).
9. P. *punctulata* (Gmel.).
10. P. *chiriri* Vieill. N. Dict. d'Hist. Nat. viii. p. 273., Azara, No. 269.
11. ? P. *dominica* (Linn.) Briss. Orn. iv. t. 9. f. 2.
12. P. *cinerea* Vieill. N. Dict. d'Hist. Nat. viii. p. 272., Azara, No. 268.
13. P. *pluvialis* (Gmel.) Sloan. Jam. pl. 258. f. 1.
14. P. *ridibunda* (Gmel.) Vieill.
15. P. *melacorypha* Vieill. N. Dict. d'Hist. Nat. viii. p. 271., Azara, No. 267.
16. P. *cornuta* (Linn.) Will. Orn. pl. 38.

Coccyzus *Vieill.**

Bill long and rather slender, with the culmen curved, and the sides compressed to the tip, which is entire; the lateral margins curved, and the gonys long and slightly curved; the nostrils sunk in a short membranous groove, with the opening anterior and oval. *Wings* lengthened and rather pointed, with the third and fourth quills nearly equal and longest. *Tail* long, broad, and rounded on the sides. *Tarsi* shorter than the middle toe, rather slender, and covered in front with broad scales. *Toes* unequal; and the claws long, compressed, curved, and acute.

These birds are found in both North and Central America, and occasionally in Europe. They prefer the densest woods, the borders of solitary swamps, and orchards; and, being shy, seek the thickest foliage for concealment. Their food consists of caterpillars and perfect insects, small shell-fish, snails, and small frogs. When in season, they feed also on fruits and berries, and are accused of sucking the eggs of other birds. "In their migrations northward, they move," says Mr. Audubon, "singly; but, when removing again to warmer latitudes, they appear to be gregarious, flying high in the air, and in loose flocks." The note, remarks Wilson, is an uncouth guttural sound, resembling the syllables "*kowe*" several times repeated, beginning slowly, but ending so rapidly that the notes seem to run into each other; and it is supposed to be more clamorous immediately before rain. The nest is usually placed amid the horizontal branches of a tree, in some retired part of the wood. It is composed of small sticks and twigs, intermixed with green weeds and blossoms of the common maple, and is much flattened. The female generally lays from three to four eggs. While she is sitting, the male is generally not far distant, and gives the alarm by his notes, when any person is approaching. The female sits so close, that she may almost be reached with the hand, and then precipitates herself to the ground, feigning lameness, fluttering, trailing her wings, and tumbling over, to draw the observer away from the spot. Both parents unite in providing food for the young; this consists for the most part of caterpillars.

1. C *americanus* (Linn.) Pl. enl. 816., Wils. Amer. Orn. pl. 28. f. 1. — Coccyzus pyrrhopterus *Vieill.* Audub. B. of Amer. pl. 2., Gould, B. of Eur. pl. 242.
2. C. *erythropthalmus* (Wils.) Amer. Orn. pl. 28. f. 2., Audub. B. of Amer. pl. 32.
3. C. *minor* (Gmel.) Pl. enl. 813. — Cuculus seniculus *Lath.* Audub. B. of Amer. pl. 169.

* Vieillot established this genus in 1816 (*Analyse, &c.* p. 28.). *Coccyzon* of M. Gloger (1827), *Cureus* of M. Boie (1831), *Erythrophrys* of Mr. Swainson (1837), and *Coccygius* of Nitzsch (1840) are synonymous with the name employed.

C. Hullmandel's Patent Lithotint

DASYLOPHUS
superciliosus (Cuv.) Swains.

The fourth Subfamily,

CROTOPHAGINÆ, or ANIS,

have the Bill more or less lengthened, with the culmen arched, and the sides much compressed; the Nostrils basal, lateral, and pierced in the substance of the bill; the Wings short and rounded; the Tail lengthened, broad, and graduated; the Tarsi long, and covered with broad transverse scales; the Toes long, placed two and two, and the two outer ones the longest; the Claws short and curved.

CROTOPHAGA *Linn.**

Bill short, sides much compressed, with the culmen elevated, arched, and forming an acute ridge, the tip rather hooked, and the lateral margins slightly curved; the nostrils lateral, exposed, and the opening partly closed by a membrane. *Wings* short, with the first three quills graduated, and the fourth, fifth, and sixth nearly equal and the longest. *Tail* long and rounded, with the feathers broad. *Tarsi* long, strong, and covered with broad transverse scales. *Toes* long, slender, and the two outer ones nearly equal; the claws long, curved, and acute.

They inhabit the islands of the West Indies and tropical parts of South America, preferring, says Mr. Kirk, places under cultivation, and more especially the low land in the neighbourhood of clear pastures or low shrubberies and swamps. Among the thickest foliage or grass they easily make their way by means of their sharp-edged bills, with which they scatter the herbage on each side in their progress after the grasshoppers, and other kinds of orthopterous insects. They have been seen on the dead carcass of a sheep; whether attracted by the putrid flesh, or by the larvæ of insects that are found in such places, is at present uncertain. In the dry season they have been noticed in flocks of twenty or thirty individuals about small rivulets, seeking the tadpoles on which they feed. Their flight is easy, and is extended only from shrub to shrub, in flocks of about twenty individuals, each uttering its note as they proceed. The nest is built in the fork of a tree or in a shrub, covered with a thicket of mistletoe vine, rudely constructed of coarse materials, chiefly small sticks, with the more pliable portions placed inside, and totally destitute of any soft lining. The eggs are five to seven or more in number. The young evince great dexterity in hopping from branch to branch; long ere they are able to fly they leave the nests, and may frequently be seen, says Mr. Kirk, perched on the top of a shrub or thicket of vines, with a congregation of adult birds; and, as the parents retire from the intruder by flight, the young prepare by long and rapid leaps to reach the ground, where they escape by an exceedingly quick run.

1. C. *Ani* Linn. Pl. enl. 102. f. 2.
2. C. *major* Linn. Pl. enl. 102. f. 1.
3. C. *lævirostra* Swains. Two Cent. and a Quart. p. 321. fig. 65. a.
4. P. *rugirostra* Swains. Two Cent. and a Quart. p. 321. fig. 65. b., Jard. & Selby's Ill. Orn. n. s. pl. 41.
5. C. *sulcirostra* Swains. Phil. Mag. 1827. p. 440., Two Cent. and a Quart. p. 322. fig. 65. c. — Crotophaga Casasi *Less.* Cent. Zool. t. 9.
6. C. *semisulcata* Swains. Two Cent. and a Quart. p. 346.

* It was in the *Systema Naturæ* of Linnæus (1756) that this genus was established. In 1760, Brisson used *Crotophagus*.

Wings lengthened, with the third quill the longest. *Tail* long and rounded. *Tarsi* shorter than the middle toe, covered with broad scales. *Toes:* the lateral outer toe nearly equal, and the fore toes united at the base.

The type of this genus is peculiar to the woods of Australia, and is discovered by its loud screaming noise. It may be observed very high in the air, wheeling about with great swiftness. Its food consists of insects both in the perfect and larva state, seeds, and figs.

S. *Novæ Hollandiæ* Lath. White's Journ. pl. 142. — Scythrops Australasiæ *Shaw ;* S. australis *Swains.* Mag. de Zool. 1835. Ois. t. 37.

Ballmandel & Walton's new Process.

CUCULUS
malayanus Raffl

The fifth Subfamily,

CUCULINÆ, or Cuckows,

have the Bill broad, and rather depressed at the base, the culmen curved, and the sides compressed to the tip, which is entire or slightly emarginated; the Nostrils basal and membranous, with the opening exposed: the Wings long, and generally pointed: the Tail long, and usually graduated: the Tarsi short, partly clothed with feathers, and partly covered with broad scales.

Cuculus *Linn.**

Bill broad, and rather depressed at the base, with the culmen curved, and the sides gradually compressed towards the tip, which is entire and acute; the gonys long and arched; the nostrils basal, lateral, and placed in a short, broad, membranous groove, with the opening round and exposed. *Wings* lengthened and pointed, with the third quill the longest. *Tail* long and graduated, or even, and the outer feather on each side shorter than the others. *Tarsi* very short, feathered below the knee, and the exposed part covered with broad scales. *Toes* unequal; the outer anterior toe the longest, and united to the inner one at the base.

The species are peculiar to the warmer portions of the Old World. They are migratory and solitary in their habits, frequenting the woody places and gardens in quest of their subsistence; and generally perch in the bushes, or on the lower branches of trees, flying occasionally from one to another, at short distances. The food of these birds consists principally of caterpillars, which they kill by means of pressing the insects between the bill; and, before swallowing them whole, the bird usually cuts off the hinder end, and by repeated jerks frees the insect of the intestinal canal: they sometimes feed on perfect lepidopterous insects. The note is loud, and uttered in a lengthened and melancholy manner, especially early in the morning and at the decline of day, and sometimes even during the night, while perching in an exposed situation. It is remarkable that the females of the species of this genus do not form any nest, but mostly deposit their eggs in the nests of sylvine birds, leaving to the foster-parent the entire hatching and rearing of the young, which, if it finds itself incommoded by the rightful owners of the nest, casts them out to perish on the ground, by which means the entire care of the foster-parent is bestowed upon the intruder.

* Established by Linnæus in 1735. It embraces *Chrysococcyx* of M. Boie (1831) (with which *Chalcites* of M. Lesson (1831) and *Lampromorpha* of Vigors (1831) are synonymous), and *Surniculus* of M. Lesson (1831) (with which *Pseudornis* of Mr. Hodgson (1839) is synonymous).

1. C. *canorus* Linn. Pl. enl. 811., Levaill. Ois. d'Afr. t. 202, 203. — Cuculus hepaticus *Sparrm.* Mus. Carls. t. 55.; C. borealis *Pall.*

2. C. *gularis* Steph. Gen. Zool. ix. 83., Levaill. Ois. d'Afr. t. 200, 201. — Cuculus lineatus *Swains.?*

3. C. *fugax* Horsf. Linn. Trans. xiii. p. 178. — Cuculus Lathami *Gray*, Ill. Ind. Zool. pl. 34. f. 2.; C. ejulans *Sundev.*; C. varius *Vahl?*; C. nivicolor *Hodgs.*; C. tenuirostris *Less.?*

4. C. *sparveroides* Vigors, Proc. Z. S. 1831. p. 173., Gould, Cent. of Birds, pl. 53.

5. C. *poliocephalus* Lath. — Cuculus himalayanus *Vigors*, Proc. Z. S. 1831. p. 172., Gould, Cent. of Birds, pl. 52.; C. micropterus *Gould.*

6. C. *Sonneratii* Lath. — Cuculus pravata *Horsf.?*; C. rufovittatus *Drap.?*

7. C. *merulinus* Scop. Sonn. Voy. t. 81. — Cuculus flavus *Gmel.* Pl. enl. 814.

8. C. *flaviventris* Scop. Sonn. Voy. t. 79. — Cuculus radiatus *Gmel.*

9. C. *variegatus* Scop. Sonn. Voy. t. 78. — Cuculus payanus *Gmel.*

10. C. *niger* Lath. — Cuculus tenuirostris *Gray*, Ill. Ind. Zool. pl. 35. f. 1.; C. flavus *Jerd.*; C. pyrogaster *Drap.?*

11. C. *sepulcralis* Müll. & Sch. Verh. Nat. Gesch. p. 177.

12. C. *symbonomus* Müll. & Sch. Verh. Nat. Gesch. p. 177.

13. C. *fasciolatus* Müll. & Sch. Verh. Nat. Gesch. p. 177.

14. C. *lanceolatus* Müll. & Sch. Verh. Nat. Gesch. p. 177.

15. C. *splendidus.* — Cuculus cupreus *Shaw*, Mus. Lev. pl. p. 159.; Type of Chrysococcyx *Boie* (1826).

16. C. *Klasii* Levaill. Ois. d'Afr. t. 212., Swains. B. of W. Afr. pl. 21.

17. C. *cupreus* Bodd. Pl. enl. 657. — Cuculus auratus *Gmel.* Levaill. Ois. d'Afr. t. 210, 211., Nat. Misc. pl. 1029.

18. C. *chalcites* Temm. Pl. col. 102. f. 2.

19. C. *smaragdinensis* Swains. B. of W. Afr. p. 191.

20. C. *basalis* Horsf. Linn. Trans. xiii. p. 179.

21. C. *metallicus* Vig. & Horsf. Linn. Trans. xv. p. 302.

22. C. *plagosus* Lath. Lamb. Icon. ined. iii. 22. — Cuculus lucidus *Vig. & Horsf.*

23. C. *lucidus* Gmel. Lath. Gen. Syn. pl. 23. — Cuculus nitens *Forst.* Desc. Anim. p. 151., Icon. ined. 57., Pl. col. 102. f. 1.

24. C.? *palliolatus* Lath. Lamb. Icon. ined. ii. 27.

25. C. *malayanus* Raffl. Linn. Trans. xiii. p. 286.

26. C. *xanthorhynchus* Horsf. Linn. Trans. xiii. t. 179., Zool. Res. in Java, pl. . — Lampromorpha amethystina *Vigors.*

27. C. *chalcopeplus* (Vigors), Proc. Z. S. 1831. p. 92.

28. C. ———. — Chrysococcyx smaragdinis *Blyth*, Journ. A.S. Beng. 1846. p. 53.

29. C. *osculans* (Gould), Proc. Z. S. 1847. p. 32.

30. C.? *versicolor* (Lath.) Ind. Orn. Suppl. p. lvi., Lamb. Icon. ined. iii. 46.

31. C. *capensis* Gmel. Pl. enl. 390. — Cuculus clamosus *Lath.* Levaill. Ois. d'Afr. t. 204, 205.; C. solitarius *Vieill.* Levaill. Ois. d'Afr. t. 206.

32. C. *nigricans* Swains. Zool. Ill. n. s. pl.

33. C. *æreus* Vieill. Encyc. Méth. p. 1333., Levaill. Ois. d'Afr. t. 215. — Cuculus æratus *Steph.*

34. C. *lugubris* Horsf. Linn. Trans. xiii. p. 286., Zool. Res. in Java, pl. — Type of Surniculus *Less.* (1831).

35. ? C. *dicruroides* Hodgs. Journ. As. Soc. Beng. 1839. p. 136. pl. — Type of Pseudornis *Hodgs.* 1839.

36. ? C *perlatus* Vieill. N. Dict. d'Hist. Nat. viii. p. 232.

37. C. *rubeculus* Swains. B. of W. Afr. ii. p. 181.

38. C. *flabelliformis* Lath. Gen. Syn. pl. 126.

39. C. *cyanocephalus* (Lath.) Lamb. Icon. ined. ii. 50.

40. C. *inornatus* Vig. & Horsf. Linn. Trans. xv. p. — Cuculus albostrigatus *Vig. & Horsf.*

41. C. *cinerascens* Vig. & Horsf. Linn. Trans. xv. p. 298., Jard. & Selby, Ill. Orn. pl. 67.

42. ? C. *incertus* Vig. & Horsf. Linn. Trans. xv. p. 299.

43. ? C. *cinereus* Vieill. N. Dict. d'Hist. Nat. viii. p. 226.

44. C. *variolosus* Vig. & Horsf. Linn. Trans. xv. p. 300.

45. ? C. *rufulus* Vieill. N. Dict. d'Hist. viii. p. 234.

46. ? C. *pyrrhophanes* Vieill. N. Dict. d'Hist. viii. p. 234.

47. ? C. *variegatus* Vieill. N. Dict. d'Hist. viii. p. 224.

48. ? C. *cærulescens* Vieill. N. Dict. d'Hist. viii. p. 224.

49. C. *optatus* Gould, Proc. Z. S. 1845. p. 18., B. of Austr. pl.

50. C. *insperatus* Gould, Proc. Z. S. 1845. p. 18., B. of Austr. pl.

51. C. *dumetorum* Gould, Proc. Z. S. 1845. p. 19.

Oxylophus *Swains.**

Bill rather long and slender, with the culmen curved, and the sides compressed to the tip, which is entire; the gonys long and arched; the nostrils basal, lateral, and placed in a short membranous groove, with the opening oval and exposed. *Wings* long and pointed, with the fourth quill the longest. *Tail* lengthened and graduated. *Tarsi* rather long, strong, and covered with broad transverse scales. *Toes* unequal; the outer anterior toe longest, and the two anterior ones slightly united at the base.

* Established by Mr. Swainson in 1837 (*Classif. of Birds*, ii. p. 322.). It is coequal with *Edolius* of M. Lesson (1831), which name had been previously employed in Ornithology.

The species of this genus are found in India, Africa, and Europe. They are migratory, and are usually observed singly or in pairs on the low branches of trees, or on the bushy ground, seeking for various kinds of insects, both in their perfect and imperfect states, on which they chiefly subsist.

1. O. *glandarius* (Linn.) Edwards's Birds, pl. 57., Temm. Pl. col. 414. — Cuculus macrurus *Brehm*; C. Andalusiæ *Briss.*; C. pisanus *Gmel.* Hist. de l'Egypt, Ois. t. *A.* f. 2.
2. O. *coromandus* (Linn.) Pl. enl. 274. f. 2., Levaill. Ois. d'Afr. t. 213. — Cuculus collaris *Vieill.*
3. O. *serratus* (Sparrm.) Mus. Carl. t. 3. — Cuculus ater *Gmel.* Levaill. Ois. d'Afr. 207, 208.; C. edolius *Cuv.*; C. jacobinus *Bodd.* Pl. enl. 872.; C. melanoleucos *Gmel.*; Leptosomus afer *Frankl.*
4. O. *afer* (Steph.) Gen. Zool. ix. p. 115. pl. 24., Levaill. Ois. d'Afr. t. 209., Leach, Zool. Misc. pl. 31. — Cuculus Levaillantii *Less.* Swains. Zool. Ill. pl. 18.

Eudynamys *Vig. & Horsf.**

Bill long, broad, with the culmen curved, and the sides compressed to the tip, which is slightly emarginated; the gonys short and angulated; the nostrils basal, lateral, and placed in a short membranous groove, with the opening large and exposed. *Wings* moderate, with the fourth and fifth quills equal and longest. *Tail* lengthened and rounded. *Tarsi* rather short, robust, and covered in front with broad scales. *Toes* unequal, the outer anterior toe the longest.

These migratory birds are found, at certain seasons of the year, in various parts of India, its Archipelago, Australia, New Zealand, and some of the South Sea Islands. They usually frequent, singly or in pairs, the various kinds of fruit-bearing trees, on the fruit of which they entirely subsist, and they especially delight in the fig of the banyan tree. Their cry consists of two or three shrill notes, which are frequently repeated, each time increasing until it becomes excessively loud. The female of an Indian species is stated by Mr. Jerdon to deposit its eggs in the nest of the *Corvus splendens*, from which it dislodges the crow's eggs.

1. E. *orientalis* (Linn.) Vig. & Horsf. Pl. enl. 274. f. 1. — Cuculus crassirostris *Vieill.*? Levaill. Ois. d'Afr. t. 214.?; C. punctatus *Linn.* Pl. enl. 771.; *C.* scolopaceus *Linn.* Pl. enl. 586., Edwards's Birds, pl. 59.; C. mindanensis *Linn.* Pl. enl. 277.; Centropus fasciatus *C. W. Smith.*
2. E. *indicus* (Lath.).
3. E. *niger* (Linn.) Hartl. Edwards's Birds, pl. 58. — Type of Gymnopus *Blyth* (1843).
4. ? E. *honoratus* (Linn.) Pl. enl. 294.
5. E. *maculatus* (Bodd.) Pl. enl. 764., Levaill. Ois. d'Afr. t. 216.?
6. E. *australis* Swains. Two Cent. & a Quart. p. 344. — Cuculus cyanocephalus *Lath.*? Lamb. Icon. ined. i. 34.?; Eudynamys orientalis *Vig. & Horsf.*
7. E. *taitensis* (Sparr.) Mus. Carls. t. 32. — Cuculus taitius *Gmel.*
8. E. *Flindersii* Vig. & Horsf. Linn. Trans. xv. 305., Griff. An. Kingd. iii. pl. p. .
9. E. *rufiventer* Less. Zool. de la Coqu. p. 622.
10. E. *picatus* Müll. & Schl. Verh. Nat. Gesch. p. 176.
11. E. *melanorhynchus* Müll. & Schl. Verh. Nat. Gesch. p. 176.

* Established by Vigors and Dr. Horsfield in 1826 (*Linn. Trans.* xv. p. 303.). It embraces *Gymnopus* of Mr. Blyth (1843).

C. Hullmandel & Walton Imprimeurs.

PTILONOPUS
occipitalis. G.R. Gray.

Order IV. COLUMBÆ *

is composed of those birds only which are well known under the denomination of Pigeons, and, as it embraces but one family, the characters will be given under it.

The Family

COLUMBIDÆ, or Pigeons,

have the Bill short, straight, compressed, with the apical half of the mandibles more or less vaulted and strong, and the base more or less weak, and covered by a soft fleshy membrane, in which are placed the Nostrils; the Wings moderate; the Tarsi more or less long and robust; and the Toes lengthened, divided, and padded beneath.

The first Subfamily,

TRERONINÆ, or Tree Pigeons,

have the Bill short, with the ends of both mandibles vaulted, and of nearly equal thickness; the Tarsi very short, and more or less feathered; the Toes divided at the base, the inner much shorter than the outer; and the claws short and curved.

Ptilonopus *Swains.*†

Bill short, slender, with the tips of both mandibles of nearly equal thickness; and the nostrils linear and lateral. *Wings* moderate, with the first quill shorter than the second, the end generally narrowed for some distance from the tips, and the third the longest. *Tail* moderate and even. *Tarsi* short, and feathered to the toes. *Toes* free at their base, and padded beneath; the inner toe shorter than the outer; the claws short and much curved.

These showy birds are found principally in Malacca, Celebes, the north-west coast of Australia, and the islands of the Pacific Ocean. Their habits are peculiarly arboreal and solitary, living entirely in the deep forests, where they are only discovered by their incessant and loud cooing. The fruits of various trees form their food, especially that of the banyan, &c.

1. P. *purpuratus* (Lath.) Swains. Temm. Pig. t. 24. — Columba Forsteri *Desm.*; Col. kurukuru *Bonn.*
2. P. *porphyreus* (Temm.) Linn. Trans. xiii. 130. — Columba porphyrea *Forst.* Icon. ined. t. 140. Temm. Pig. t. 35.
3. P. *viridissimus* (Temm.) — Columba viridissima *Pig.* t. 34.
4. P. *xanthogaster* (Wagl.) — Columba purpurata *Temm.*; Col. diademata *Temm.* Pl. col. 254.; Ptilonopus flavigaster *Swains.*
5. P. *Ewingii* Gould, Proc. Z. S. 1842. 19., Gould's B. of Austr.
6. P. *Swainsoni* Gould, Proc. Z. S. 1842. 18., Gould's Birds of Austr. pl. — Ptilonopus purpuratus var. regina *Swains.* Jard. & Selby's Ill. Orn. pl. 70.; Columba roseicapilla *Less.*
7. P. *pulchellus* (Temm.) Pl. col. 564., Knip et Prev. Pig. t. 14.
8. P. *monachus* (Reinw.) Swains. Pl. col. 253.
9. P. *taitensis* (Less.) Voy. de la Coqu. Zool. 1. 297.
10. P. *perlatus* (Temm.) Pl. col. 559., Knip et Prev. Pig. t. 21.
11. P. *hyogaster* (Temm.) Swains. Pl. col. 252.

* Latham. The *Gyratores* of the Prince of Canino.

† Established by Mr. Swainson (*Zool. Journ.* i. 473.) in 1825; it has been since changed to *Ptilopus* by Mr. Strickland.

12. P. *naina* (Temm.) Pl. col. 565.
13. P. *cyanovirens* (Less.) Selby, Voy. de la Coqu. t. 42. f. 1. — Ptilonopus leucogaster *Swains.* Knip et Prev. Pig. t. 8.
14. P. *virens* (Less.) Voy. de la Coqu. t. 42. f. 2.
15. P. *viridis* (Linn.) Swains. Mag. de Zool. 1836. pl. 76., Knip et Prev. Pig. t. 17.
16. P. *jambu* (Gmel.) Temm. Pig. t. 27, 28.
17. P. *superbus* (Temm.) Steph. Temm. Pig. t. 33., Knip et Prev. Pig. t. 42.
18. P. *cinctus* (Temm.) Temm. Pig. t. 23.
19. P. *holosericeus* (Temm.) Temm. Pig. t. 32.
20. P. *maculatus* (Gmel.) Swains. Lath. Hist. of B. viii. pl. 117.
21. P. *roseicollis* (Wagl.) — Columba porphyrea *Temm.* Pl. col. 106.; Ptilonopus erythrocephalus *Swains.* Knip et Prev. Pig. t. 4.
22. P. *melanocephalus* (Penn.) Steph., Penn. Zool. Ind. pl. 7., Pl. enl. 214., Temm. Pig. t. 30.
23. P. *pulcherrimus* (Scop.) Sonn. Nouv. Guin. t. 67. — Columba rubricapilla *Gmel.* Temm. Pig. t. 20.
24. P. *purpuroleucocephalus* (Homb. & Jacq.) Ann. Sci. Nat. 1841. p. 316.
25. P. *occipitalis* G. R. Gray.

Treron *Vieill.**

Bill short, robust, with the tips of both mandibles much vaulted, especially that of the upper, the basal portion depressed and straight; the nostrils lateral and longitudinal. *Wings* moderate and pointed, with the second and third quills nearly equal and longest, the third quill with the inner web notched near the middle. *Tail* moderate and rounded, sometimes lengthened and wedge-shaped. *Tarsi* very short, thick, and feathered below the knee. *Toes* free at the base, the inner shorter than the outer, the hind toe long and broad; and the claws moderate, compressed, and arched.

The species inhabit the continent of India, its Archipelago, and the continent of Africa; they are entirely arboreal birds, and live in flocks of from three to thirty, seeking from branch to branch of the low trees and bushes of the vast forests for the various soft berries which constitute their food. Their flight, Mr. Pakeman has kindly informed me, is very rapid, and is generally performed in the night time, within a few yards of the ground. Their nest is built on the cross branches in the thickest parts of the spiny shrubs; it is composed of a few twigs loosely put together, and in it they lay two eggs.

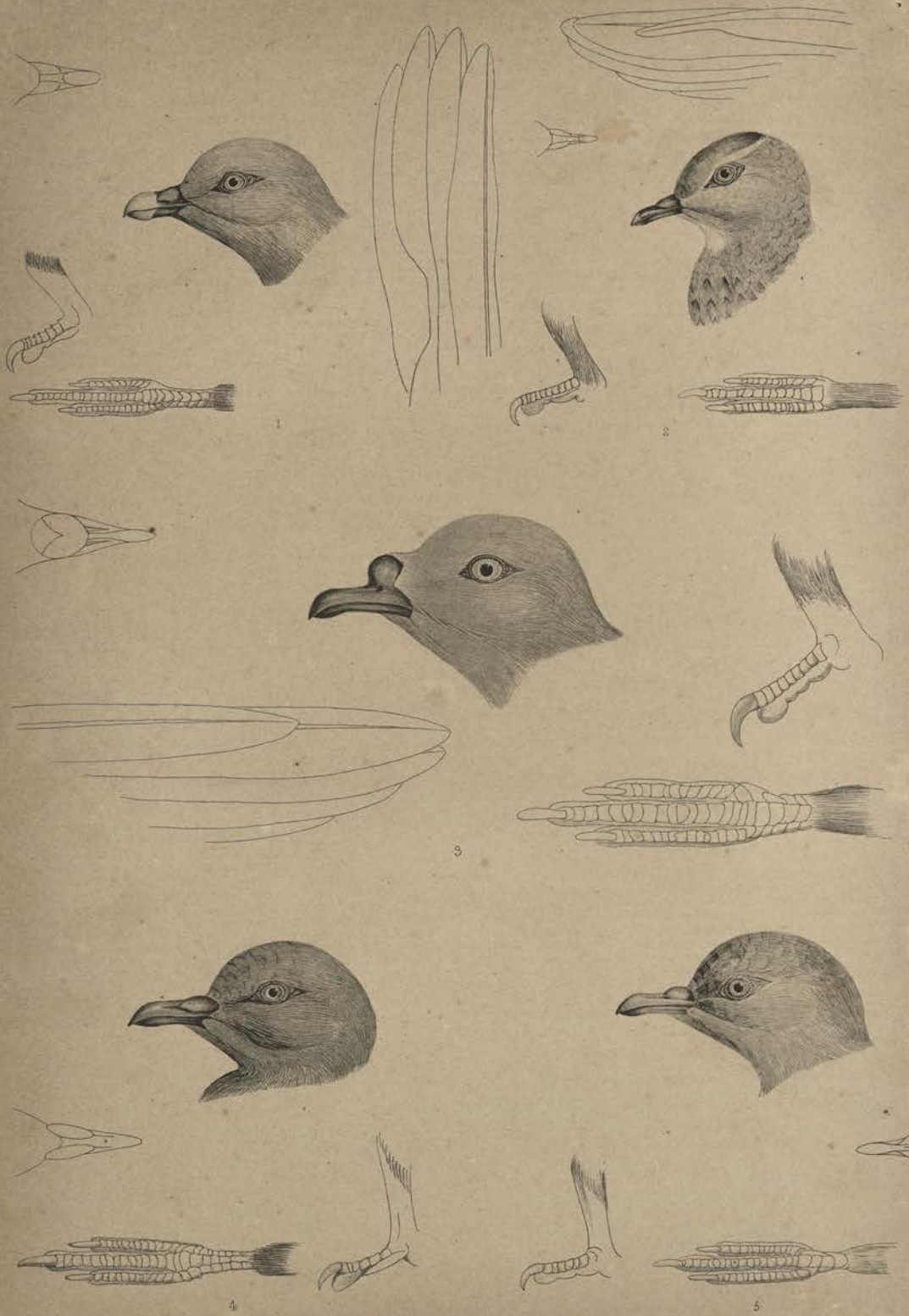
1. T. *aromatica* (Gmel.) Steph. Pl. enl. 163., Temm. Pig. t. 5. — Columba curvirostra *Gmel.*; Col. xanthura *Forst.* Icon. ined. t. 138.; Toria nipalensis *Hodgs.*
2. T. *fulvicollis* (Wagl.) — Columba aromatica var. *Temm.* Pig. t. 6.; Col. cinnamomea *Temm.*
3. T. *olax* (Temm.) Steph. Pl. col. 241., Knip et Prev. Pig. t. 12.
4. T. *Sti. Thomæ* (Gmel.) — Columba phœnicoptera *Lath.*; Col. militaris *Temm.* Pig. t. 10.; Col. Hardwickii *Gray*; Col. pompadora *Gmel.*
5. T. *Jerdoni* Strickl. Ann. Nat. Hist. 1844. 38. — Columba militaris *Jerd.*; Vinago chlorogaster *Blyth.*
6. T. *psittacea* (Temm.) Steph. Temm. Pig. t. 4.
7. T. *vernans* (Linn.) Steph. Pl. enl. 138. — Columba purpurea *Gmel.* Brown's Ill. t. 18.; Col. tannensis *Lath.*; Col. viridis *Scop.* Temm. Pig. t. 10.; Vinago bicincta et V. unicolor *Jerd.*
8. T. *australis* (Linn.) Steph. Jard. & Selby's Ill. Orn. t. 81. — Vinago nudirostris *Swains.*
9. T. *abyssinica* (Lath.) Temm. Pig. t. 8. — Columba humeralis *Wagl.*
10. T. *calva* (Temm.) Steph., Temm. Pig. t. 7.
11. T. *crassirostris* Fras. Proc. Z. S. 1843. 35.
12. T. *Capellei* (Temm.) Steph. Temm. Pl. Col. 143., Knip et Prev. Pig. t. 38.
13. T. *oxyura* (Temm.) Pl. col. 240. Knip et Prev. Pig. t. 20. — Sphenurus semitorquatus *Swains.*
14. T. *sphenura* (Vigors), Proc. Z. S. 1831. 173., Gould's Cent. of Birds pl. 57.
15. T. *Sieboldii* (Temm.) Pl. col. 549., Knip et Prev. Pig. t. 10.
16. T. *Korthalsii* (Temm.)
17. T. ? *cimensis* (Gmel.)
18. T. ? *asiatica* (Gmel.)

* Vieillot established this name (*Analyse*, p. 49.) in 1816; but Cuvier (1817) used in its place *Vinago*; Mr. Hodgson (*As. Res.* 1836, p. 163.) *Toria*, which in 1841 he changed to *Romeris*: all these are coequal. Some of the species were separated under the appellation of *Sphenurus* by Mr. Swainson (*Class. of Birds*, ii. p. 348.) in 1837.

August, 1844.

C.Hullmandel's Patent Lithotint

CARPOPHAGA
poliocephala G.R.Gray



TRERON aromatica. 2. PTILONOPUS purpuratus. 3. CARPOPHAGA ænea. 4. ECTOPISTES migratorius. 5. MACROPYGIA amboinensis.

6. LOPHOLAIMUS antarcticus. 7. GEOPELIA humeralis. 8. COLUMBA œnas. 9. ŒNA capensis. 10. TURTUR aurinus.

The second Subfamily,

COLUMBINÆ, or PIGEONS,

have the Bill moderate, slender, with the basal portion covered with a soft tumid skin, and the apical part hard and slightly vaulted, and acute at the tip ; the Nostrils forming a longitudinal slit in the fore part of the soft basal portion of the bill; the Wings moderate and pointed; the Tail of various lengths, and generally rounded; the Tarsi generally short ; the Toes lengthened, the lateral ones mostly equal, and the hind toe about the length of the tarsus.

CARPOPHAGA *Selby.**

Bill moderate, slender, with the base depressed, the tip compressed and moderately arched, and the margin slightly sinuated; the nostrils placed in the soft basal portion of the bill, and forming a longitudinal slit. *Wings* moderate and pointed ; with the second, third, and fourth quills nearly equal, and longest. *Tail* lengthened, and generally rounded. *Tarsi* very short, and clothed with down below the knee. *Toes* strong, and broadly padded below ; with the outer toe longer than the inner, and the hind toe much developed.

The species of this genus are found in the forests of India, the Moluccas, Celebes, Australia, and the islands of the Pacific. They live on the branches of the highest trees, seeking the various fruits and berries that grow on them. When compelled to remove to a fresh locality for their food, they travel generally in small flocks, at an elevation sufficient to clear the tops of the high trees of the primeval forests. Some of the species feed on the nutmeg, or rather its soft covering, generally known as the mace. The fruit, according to Sonnerat, is swallowed entire, passes uninjured through the digestive organs of the bird, and is thus dispersed throughout the group of the Moluccas and other islands of the East. This process is supposed to be necessary for the germination of the nutmeg. The nest is formed of sticks laid together in cross rows, whereon the female deposits one or two eggs.

1. C. *ænea* (Linn.) Selby, Temm. Pig. t. 3, 4., Voy. de l'Uranie, t. 29. — Columba pacifica *Gmel.*
2. C. *oceanica* (Less.) Selby, Voy. de la Coqu. t. 41., Kittl. Kupf. der Vogel, t. 33. f. 1., Knip et Prev. Pig. t. 24. — Col. globicera *Forst.* Icon. ined. t. 139.
3. C. *myristicivora* (Scop.) Sonn. Voy. t. 103. — Columba alba *Gmel.*; Columba littoralis *Temm.* Pig. t. 7.
4. C. *luctuosa* (Temm.) Selby, Pl. col. 247., Gould's B. of Austr. pl., Knip et Prev. Pig. t. 40.
5. C. *norfolciensis* (Lath.) — Columba leucomela *Temm.* Pl. col. 186., Gould's B. of Austr. pl., Knip et Prev. Pig. t. 28.
6. C. *magnifica* (Temm.) Selby, Pl. col 163., Knip et Prev. Pig. t. 25.
7. C. *puella* (Less.) Knip et Prev. Pig., t. 1.
8. C. *novæ zealandiæ* (Gmel.) — Columba zealandica *Lath.*; Columba argetræa *Forst.* Icon. ined. t. 137.; Columba princeps *Vigors*, Jard. & Selby, Ill. Orn. n. s. pl. 5.?
9. C. *spadicea* (Lath.) Temm. Pig. t. 1., Gould's B. of Austr. pl. — Columba leucogaster *Wagl.*
10. C. *Pinon* (Quoy & Gaim.) Selby, Voy. de l'Uranie, Ois. t. 28., Knip et Prev. Pig. t. 15.
11. C. *badia* (Raffl.) Linn. Trans. xiii. 317. — Columba capistrata *Temm.* Pl. col. 165., Knip et Prev. Pig. t. 37.
12. C. *insignis* (Hodgs.) As. Res. xix. 161. — Type of Ducula *Hodgs.* (1836.)
13. C. *janthina* (Temm.) Pl. col. 503., Knip et Prev. Pig. t. 16., Kittl. Kupf. der Vogel, t. 5. f. 1.
14. C. *perspicillata* (Temm.) Pl. col. 246.

* Established by Mr. Selby (*Nat. Libr. Ornith.* vol. v. p. 112.) in 1835. Mr. Hodgson's genus *Ducula* (1836) (*As. Res.* xix. 160.), since changed to *Rinopus* (1841) by the same author, is coequal.

15. C. *rosacea* (Temm.) Pl. col. 578., Knip et Prev. Pig. t. 34.
16. C. *lacernulata* (Temm.) Pl. col. 164.
17. C. *Forsteri* (Temm.) Knip et Prev. Pig. t. 48.
18. C. *cineracea* (Temm.) Pl. col. 563.
19. C. *metallica* (Temm.) Pl. col. 562.
20. C. *Mulleri* (Temm.) Pl col. 566.
21. C. *Kittlizii* (Temm.) Pl. col. (no plate).
22. C. *Zoeæ* (Less.) Voy. de l'Uranie t. 39., Knip et Prev. Pig. t. 3.
23. C. *radiata* (Quoy & Gaim.) Voy. de l'Astrol. t. 26., Knip et Prev. Pig. t. 29.
24. C. *rufigaster* (Quoy & Gaim.) Voy. de l'Astrol. t. 27., Knip et Prev. Pig. t. 9.
25. C. *gularis* (Quoy & Gaim.) Voy. de l'Astrol. t. 29., Knip et Prev. Pig. t. 11.
26. C. *vitiensis* (Quoy & Gaim.) Voy. de l'Astrol. t. 28.
27. C. *Elphinstoni* (Sykes), Proc. Z. S. 1832. 149.
28. C.? *madagascariensis* (Gmel.) Temm. Pig. t. 17., Le Vaill. Ois. d'Afr. t. 266. — Columba phœnicura *Wagl.*
29. C. ? *auricularis* (Temm.) Temm. Pig. t. 21. — Columba Temminckii *Wagl.*
30. C. *poliocephala* G. R. Gray.

Lopholaimus.*

Bill moderate, strong, much compressed on the sides, with the base of both mandibles swollen, and the apical half of the culmen arched and hooked at the tip; the nostrils near the middle of the bill, and rather oblique. *Wings* very long, with the first two quills slightly graduated, and the third the longest. *Tail* long and slightly rounded. *Tarsi* shorter than the middle toe, and half-clothed with down. *Toes* long, the lateral ones equal; the claws strong and curved.

"It is exclusively," says Mr. Gould, "confined to the rich and luxuriant districts of the southern and eastern portions of Australia. So entirely arboreal are its habits, that I never once saw it descend to the ground, or even to the low shrub-like trees. It is strictly gregarious, often traversing the forests in flocks of many hundreds, in search of those trees most laden with its favourite fruits; upon discovering which the entire flock alights simultaneously, with a rushing noise, clinging to and bearing down the smaller twigs and branches with their weight, for grasping which their broad hand-like feet seem peculiarly fitted. It is a bird of powerful flight, and usually flies at a considerable elevation, in flocks closely packed together." It feeds on the wild fig, and the large round berries of the cabbage palm.

L. *antarcticus* (Shaw), Shaw's Zool. of N. Holl. pl. 5., Gould's B. of Austr. pl. — Columba dilopha *Temm.* Pl. col. 162.

Columba *Linn.*†

Bill moderate, straight, the basal half of the culmen covered with a soft cartilaginous substance, the apical half hard, arched, and hooked to the tip, which is somewhat compressed; the nostrils placed towards the middle of the bill, above which the skin is swollen. *Wings* moderate and pointed, with the first quill shorter than the second, which is the longest. *Tail* rather short, even, or rather rounded at its end. *Tarsi* very short and moderate. *Toes* moderate, and free at their base, with the lateral ones equal; and the claws short, strong, and curved.

These birds are scattered throughout the world; they are generally seen in the summer months in pairs, and on the commencement of winter they congregate in flocks of various magnitudes. These flocks sometimes migrate during the summer to the more northern latitudes, and return to the genial parts on the approach of winter. Most of the species feed on the beech mast and acorns, &c., for which they seek the woods or trees that afford them the best supply; and, when this kind of nourishment fails them, they attack the cultivated fields. For this purpose, they take their way early in the morning from the woods where they had retired to roost for the night; and, when satisfied, they fly to rest

* This genus was established by Mr. Swainson, under the denomination of *Lophorhynchus*, in 1837 (*Class. of Birds*, ii. 348.); but that name having been previously employed in ornithology, &c., it was changed to the above by me.

† Established by Linnæus in 1735, and it embraces *Palumbus* Kaup (1829).

on the nearest trees till the hour of their evening meal has arrived, when they again seek for food; and, having satiated themselves, again retire to the woods. Some of the species always inhabit rocky places and precipitous cliffs, especially those on the sea coasts of Great Britain, Africa, and Asia, which furnish them with suitable places of retreat. The nests are formed on trees or in holes of the rocks, and are composed of twigs slightly interwoven together; the female deposits two eggs.

1. C. *Œnas* Linn. Pl. enl. 466., Temm. Pig. t. 11.
2. C. *Palumbus* Linn. Pl. enl. 316., Temm. Pig. t. 2. — Type of Palumbus *Kaup.* (1829.)
3. C. *Livia* Briss. Pl. enl. 510., Temm. Pig. t. 12.
4. C. *intermedia* Strickl. Ann. Nat. Hist. 1844. 39.
5. C. *leucocephala* Linn. Temm. Pig. t. 13., Pr. Bonap. Am. Orn. t. 17. f. 1.
6. C. *gymnophthalmos* Temm. Pig. t. 18. — Columba leucoptera *Pr. Max.*; Columba loricata *Licht.*; Columba picazuro *Temm.*
7. C. *maculosa* Temm. Pig. et Gall. 1. 113. — Columba poicioloptera *Vieill.*
8. C. *arquatrix* Temm. Pig. t. 5.
9. C. *guinea* Linn. Temm. Pig. t. 16. — Columba trigonigera *Wagl.*
10. C. *albitorques* Rüpp. Faun. Abyss. Vog. t. 22. f. 1.
11. C. *speciosa* Gmel. Pl. enl. 213., Temm. Pig. t. 14.
12. C. *araucana* Less. Voy. de la Coqu. Ois. t. 40. — Columba denisea *Temm.* Pl. col. 502.; Columba meridionalis *King.*
13. C. *fasciata* Say, Pr. Bonap. Am. Orn. t. 8. f. 3.
14. C. *monilis* Vigors, Beechey's Voy. Zool. p. 26. pl. 10.
15. C. *plumbea* Vieill. N. Dict. H.N. 26. 358.—Columba locutrix *Pr. Max.* Temm. Pl. col. 166.
16. C. *rufina* Temm. Pig. t. 24. — Columba cayanensis *Bonn.*
17. C. *sylvestris* Vieill. N. Dict. Hist. Nat. 26. p. 366.— Columba melanoptera *Temm.* Azara, 319.
18. C. *flavirostris* Wagl. Isis, 1830. 519.
19. C. *leuconota* Vigors, Proc. Z. S. 1831. 22., Gould's Cent. Birds, t. 59.
20. C. *Hodgsoni* Vigors, Proc. Z. S. 1832. 16.
21. C. *metallica* Vigors, Beechey's Voy. Zool. p. 25.
22. C. *versicolor* Kittl. Vogel, pl. 5. f. 2.
23. C. *nipalensis* Hodgs. Journ. As. Soc. Beng. 1836. 122.
24. C. *cærulea* Temm. Pig. t. 37.
25. C. *caribea* Temm. Pig. t. 10. —Columba lamprauchen *Wagl.*
26. C. *corensis* Gmel.— Columba portoricensis *Temm.* Pig. t. 15., Voy. l'Ile de Cuba, Ois. t. 27.; Col. monticola *Vieill.*; Col. imbricata *Wagl.*
27. C. *Trocaz* Heinek. Brewst. Journ. of Sci., Jard. & Selby's Ill. Orn. p. 98. — Columba laurivora *Berth. & Webb*, Voy. de l'Ile Canar. Ois. t. 3., Knip et Prev. Pig. t. 43.
28. C. *leucotis* Temm. Pl. col. 189., Knip et Prev. Pig. t. 2.
29. C. *picturata* Temm. Pl. col. 242., Knip et Prev. Pig. t. 35. — Columba Dufresnii *Steph.*
30. C. *xanthonura* Cuv. Temm. Pl. col. 190.— Columba Pampusan *Quoy & Gaim.* Voy. de l'Uranie, Ois. t. 301.
31. C. *inornata* Vigors, Voy. l'Ile de Cuba, Ois. t. 28.
32. C. *infuscata* Licht. Cat. Dupl. Berl. Mus. p. 66.
33. C. *flava* Homb. & Jacq. Voy. au Pole Sud, &c., Ois. t. 12. f. 2.
34. C. *Fitzroyi* King, Proc. Z. S. 1830. p. 15.

Ectopistes *Swains.**

Bill moderate, slender, with the apical half of the culmen slightly arched to the tip; the nostrils placed in the middle of the bill, and longitudinal. *Wings* lengthened and pointed, with the first two quills the longest. *Tail* lengthened and cuneated, with the four middle feathers lanceolated. *Tarsi* the length of the hind toe, and plumed below the knee. *Toes* long, the lateral ones nearly equal, and the claws moderate and somewhat curved.

The two species of pigeons that form this genus are found on the continent of North America, where they are seen in flocks, which have been observed to be composed at times of millions of individuals. They fly with great power, and for enormous distances at a time; which migrations their numbers often compel them to perform in quest of food. The principal portion of their food consists of beech mast and acorns; but considerable quantities of buck-wheat, Indian corn, and other kinds of grain, are destroyed by these birds as they appear, in their separate seasons. "As soon as the pigeons," says Mr. Audubon, "discover a sufficiency of food to entice them to alight, they fly round in circles, reviewing the country below. During their evolutions on such occasions, the dense mass which they form exhibits a beautiful appearance, as it changes its direction, now displaying a glistening sheet of azure when the backs of the birds come simultaneously in view, and anon suddenly presenting a mass of rich deep purple. They then pass lower over the woods, and for a moment are lost among the foliage, but again emerge, and are seen gliding aloft. They now

* Established by Mr. Swainson (*Zool. Journ.* iii. p. 362.) in 1827.

alight, but the next moment, as if suddenly alarmed, they take to wing, producing, by the flapping of their wings, a noise like the roar of distant thunder, and sweep through the forests to see if any danger is near. Hunger, however, brings them to the ground. When alighted, they are seen industriously throwing up the withered leaves in quest of fallen mast. The rear ranks are continually rising, passing over the main body, and alighting in front, in such rapid succession, that the whole flock seems still on wing. The quantity of ground thus swept is astonishing, and so completely has it been cleared, that the gleaner who might follow in the rear would find his labour completely lost." The nest, which is also built in company with numerous others, is composed of small twigs carelessly placed together, and the female deposits thereon two eggs.

1. E. *migratorius* (Linn.) Swains. Temm. Pig. t. 48, 49. — Columba canadensis *Linn.* Wils. Amer. Orn. pl. 44. f. 1.

2. E. *marginatus* (Linn.) Temm. Pig. t. 50. — Columba carolinensis *Linn.*

Geopelia *Swains.**

Bill moderate, straight, and very slender, with the apical half of the upper mandible slightly curved to the tip; the nostrils placed in the middle of the bill, and longitudinal. *Wings* short and rounded, with the first quill generally narrowed towards the tip, and the third and fourth the longest. *Tail* lengthened, and graduated on the sides. *Tarsi* the length of the middle toe, and scutellated. *Toes* long, the lateral ones nearly equal.

The habits of the birds that form this division are veiled in obscurity. They are found in the jungles and forests of the continent of India, its archipelagos, and the continent of Australia.

1. G. *humeralis* (Temm.) Pl. col. 191. — Columba erythrauchen *Wagl.*

2. G. *striata* (Linn.) — Columba sinica *Linn.*; Columba malaccensis *Gmel.* Temm. Pig. t. 47.; Columba Fowat *Bonn.*

3. G. *cuneata* (Lath.) — Columba Macquarrie *Quoy & Gaim.* Voy. de l'Uranie, Ois. t. 31.

4. G. *Maugeus* (Temm.) Temm. Pig. t. 52.

Macropygia *Swains.*†

Bill short, slender, and slightly arched at the tip of the upper mandible; the nostrils placed near the middle of the bill. *Wings* lengthened and rounded, with the first and second quills graduated, and much shorter than the third, which is the longest. *Tail* very long and graduated, with the feathers broad. *Tarsi* plumed below the knee, and the length of the hind toe. *Toes* long, the lateral ones equal; and the claws moderate and somewhat curved.

These birds live most frequently in pairs, on the crests of high rocks, in the large forests of the Philippine and Molucca Islands, Java, &c., from which they make excursions into the plantations of pepper, the berries of which they swallow entire. Great depredations are committed by them on the seed before it is ripe, and on numerous other kinds of spicy plants. The various aromatic berries of these islands impart an agreeable flavour to their flesh, which makes them much sought after by epicures as a great delicacy.

1. M. *amboinensis* (Linn.) — Columba phasianella *Temm.* Pl. col. 100.

2. M. *unchall* (Wagl.). Syst. Av. Columb. sp. 38.

3. M. *leptogrammica* (Temm.) Pl. col. 248.

4. M. *macrura* (Gmel.) Pl. enl. 329.

5. M. *ruficeps* (Temm.) Pl. col. 561., Knip et Prev. Pig. t. 36.

6. M. *modesta* (Temm.) Pl. col. 552., Knip et Prev. Pig. t. 31.

7. M. *Reinwardtii* (Temm.) Swains. Pl. col. 248.. Knip et Prev. Pig. t. 11.

8. M. *manadensis* (Quoy & Gaim.) Voy. de l'Astrol. Zool. 1. 248. t. 30. Knip et Prev. Pig. t. 46.

* Established by Mr. Swainson (*Class. of Birds*, ii. 348.) in 1837.

† Established by Mr. Swainson (*Class. of Birds*, ii. 348.) in 1837.

Œna *Selby.**

Bill very slender and moderate. *Wings* lengthened, with the first three quills nearly equal, and longer than the others. *Tail* very long and much cuneated, with the two middle feathers narrowed. *Tarsi* nearly the length of the middle toe, and slender. *Toes* moderate, with the lateral ones nearly equal.

The type is found on the trees that border the rivers of the southern parts of Africa. Its habits are unknown except that it is in low trees or bushes that the females form their nest, wherein are deposited two eggs.

Œ. *capensis* (Linn.) Selby, Pl. enl. 140. — Columba atrogularis *Wagl.*

Turtur *Selby.*†

Bill slender and straight, with the tip slightly arched and acute. *Wings* rather lengthened, with the first two quills rather graduated, and the second and third the longest. *Tail* moderate, even, or rounded. *Tarsi* rather shorter than the middle toe, and scutellated in front. *Toes* very long and slender, with the outer one shorter than the inner; the claws moderate and slightly curved.

These birds are found in various parts of Europe, Africa, and India, in the woods, jungles, &c., where they are generally discovered by their cooing notes. Those of Europe migrate on the approach of winter to the southern parts, and return to the north on the arrival of the warmer months. It is generally in small flocks of about twenty, and in the open cultivated ground, that they seek their food, which consists for the most part of grains, grass seeds, &c., but occasionally they attack the pea fields on the ripening of the peas. The nest is formed in the closest woods, of small twigs loosely put together, in which the female lays two eggs.

1. T. *auritus* Ray, Temm. Pig. t. 42.—Columba Turtur *Linn.*; Turtur migratorius *Selby.*
2. T. *meena* (Sykes), Proc. Z. S. 1831. 149. — Columba gelastis *Temm.* Pl. col. 550., Knip et Prev. Pig. t. 27.
3. T. *lugens* (Rüpp.) Faun. Abyss. t. 22. f. 2.
4. T. *risorius* (Linn.) Selby, Temm. Pig. t. 44.
5. T. *vinaceus* (Gmel.) — Columba erythrophrys *Swains.* B. of W. Afr. ii. pl. 22.
6. T. *bitorquatus* (Temm.) Temm. Pig. t. 40.
7. T. *humilis* (Temm.) Pl. col. 259. 258., Knip et Prev. Pig. t. 7.
8. T. *senegalensis* (Linn.) Temm. Pig. t. 45. — Columba cambaiensis *Gmel.*, Hist. de l'Egypt. Ois. t. 9. f. 3.; Columba ægyptiaca *Lath.*; Columba maculicollis *Wagl.*
9. T. *chinensis* (Scop.) Sonn. Voy. 11. t. 102. — Columba suratensis *Gmel.*; Columba tigrina *Temm.* Pig. t. 43.
10. T. *semitorquatus* (Rüpp.) Faun. Abyss. t. 23. f. 2.
11. T. *albiventris* — Turtur semitorquatus *Swains.* B. of W. Afr. 11. 208.
12. T. *Dussumieri* (Temm.) Pl. col. 188., Knip et Prev. Pig. t. 20.

* Proposed by Mr. Selby; and adopted by Mr. Swainson, in his *Class. of Birds*, ii. 349.. in 1837.

† Established by Mr. Selby (*Nat. Libr. Ornith.* v. p. 169.) in 1835. *Peristera* of M. Boie (1828) is coequal, but this name had been previously used by Mr. Swainson.

GOURA
Staarsii (Temm.)

COLLECTION TESTIMONIAL

From the living bird in the Earl of Derby's Aviary at Knowsley
by B. Waterhouse Hawkins

On Stone by T. M.

The third Subfamily,

GOURINÆ, or GROUND PIGEONS,

have the Bill moderate, more or less slender, straight, with the apical portion generally strong and vaulted; the Wings moderate and pointed; the Tail moderate, and rounded on the sides; the Tarsi as long as, or longer than, the middle toe, and robust; the Toes long, and margined on their sides with a membrane, and the hind toe usually long and slender; the Claws short and curved.

COLUMBINA *Spix.**

Bill shorter than the head, very slender, straight, with the tip vaulted and arched, the gonys lengthened and curved upwards; the nostrils lateral, membranous, and linear. *Wings* moderate, with the first to the third quills equal and longest. *Tail* lengthened, and rounded on the sides. *Tarsi* shorter than the middle toe, and robust. *Toes* moderate, margined on their sides with a membrane, and the lateral ones nearly equal; the hind toe as long as the outer one; the claws short and curved.

These pretty little birds are peculiar to the warmer parts of South America.

1. C. *picui* (Temm.) Pig. et Gall. p. 435., Knip et Prev. Pig. t. 30.
2. C. *strepitans* Spix, Av. Bras. ii. t. 75. f. 1.
3. C. *campestris* Spix, Av. Bras. ii. t. 75. f. 2., Temm. Pl. col. 341. f. 1.
4. C. *erythrothorax* Meyen, Acad. Nat. Curios. 1833. t. 26. — Columba monticola *Tschudi.*
5. C. *gracilis* (Tschudi), Wiegm. Arch. 1843. 385.
6. C. ? *meloda* (Tschudi), Wiegm. Arch. 1843. 385.

ZENAIDA *Pr. Bonap.*†

Bill straight and slender, with the tip of the upper mandible vaulted and arched; the nostrils lateral, and near the middle of the bill. *Wings* long, with the first quill shorter than the second, which is the longest. *Tail* moderate and much rounded. *Tarsi* robust, shorter than the middle toe, with the toes margined on their sides with a membrane. *Toes* long, free at the base, with the lateral toes nearly equal; the hind toe long and slender.

The islands of the West Indies and the Galapagos are the localities of these small pigeons; they are always found on the ground, where they are most commonly observed dusting themselves, and seeking for their food. When flushed, they produce a whistling noise with their wings.

* Established by Spix (*Avium Bras.*) in 1825.
† Established by the Prince of Canino in his *List of the Birds of Europe and North America*, which was published in 1838.

1. Z. *amabilis* Pr. Bonap. — Columba zenaida *Pr. Bonap.* Journ. Ac. Phil. 1825. 28., Am. Orn. t. 17. f. 2.
2. Z. *galapagoensis* Gould, Voy. Beagle, Birds, pl. 46.
3. Z. *leucoptera* (Linn.) Edwards's Birds, pl. 76.
4. Z. *aurita* (Temm.) Pig. t. 25., Azara No. 322.

Chamæpelia *Swains.**

Bill very slender, straight, with the tip of the upper mandible slightly vaulted and arched; the nostrils lateral, membranous and linear. *Wings* moderate and rounded, with the first quill shorter than the second and third, which are the longest, and not much longer than the tertials. *Tail* more or less lengthened, and rounded on the sides. *Tarsi* shorter than the middle toe, and robust, with a line of feathers on the outer side. *Toes* long, with the lateral ones equal; the hind toe as long as the outer; the claws short and curved.

The warmer parts of South America and Africa are the peculiar abode of these small birds. They are usually observed in pairs on the borders of woods and bushy tracts. They live principally on the ground, where they walk and run with equal facility; but they are occasionally seen on trees, at a moderate height from the ground. Their flight is low, and is generally performed in circling sweeps. The nest is slightly put together, and is placed on low trees or shrubs; and the female deposits two eggs.

1. C. *passerina* (Linn.) Swains. Pl. enl. 243., Wils. Am. Orn. pl. 46. f. 2, 3., Temm. Pig. t. 13, 14.
2. C. *talpacoli* (Temm.) Swains. Temm. Pig. t. 12. — Columbina cabocola *Spix*, Av. Bras. t. 75. a. f. 1.; Chamæpelia cinnamomea *Swains.*
3. C. *minuta* (Linn.) Briss. Orn. 1. t. 8. f. 2., Temm. Pig. t. 16. — Columbina griseola *Spix*, Av. Bras. t. 75. a. f. 2.
4. C. ? *aymara* (D'Orb.) Knip et Prev. Pig. t. 32.
5. C. *hottentotta* (Temm.) Temm. Pig. t. 15., Le Vaill. Ois. d'Afr. t. 283. — Columba gularis *Wagl.*
6. C. *squamosa* (Temm.) Temm. Pig. t. 59.
7. C. *venusta* (Temm.) Temm. Pl. col. 341. f. 1., Knip et Prev. t. 26.

Peristera *Swains.*†

Bill very slender, and slightly vaulted at the tip of the upper mandible; the nostrils lateral, membranous. *Wings* moderate, with the first quill short, and suddenly narrowed in the males, and the third, fourth, and fifth the longest. *Tail* moderate and rounded. *Tarsi* lengthened, and longer than the middle toe, with the knee naked. *Toes* long and slender, with the lateral ones unequal; the hind toe very slender, and nearly as long as the outer toe; the claws short and curved.

These birds are found in the intertropical parts of South America, the West Indies, South Africa, and one in the South Sea islands. They are generally observed on the ground in coveys or pairs in bushy or woody districts, where they obtain their food, and where they walk and run with great activity and quickness. In such places they seek for various seeds of grasses, maize, &c., and also for berries and small fruits, on which they subsist. Their flight is low, generally sustained only for a short distance, and is similar to that of the partridge. When reposing, they usually select the lower branches of the thick bushes. The nest is generally placed on the ground, and is composed of twigs and dried grasses. The female deposits two eggs.

* Established in 1827 by Mr. Swainson (*Zoological Journal*, p. 361.).
† It was in 1827 that Mr. Swainson established this genus (*Zoological Journal*, p. 360.); but in 1837 he used *Leptoptila* for it by some mistake.

1. P. *cinerea* (Temm.) Swains. Temm. Pig. t. 58., Pl. col. 260.
2. P. *Geoffroyi* (Temm.) Temm. Pig. t. 57.
3. P. *montana* (Linn.) Edwards's Birds, pl. 119., Le Vaill. Ois. d'Afr. t. 282., Pl. enl. 141. — Columba martinica *Temm.* Pig. t. 4, 5, & 6.
4. P. *jamaicensis* (Linn.) — Columba rufaxilla *Rich. et Bern.*; Columba frontalis *Temm.* Pig. t. 10.
5. P. *violacea* (Temm.) Temm. Pig. t. 29.
6. P. *larvata* (Temm.) Selby, Temm. Pig. t. 31., Le Vaill. Ois. d'Afr. t. 269. — Columba erythrothorax *Temm.* Pig. t. 7?
7. P. *erythroptera* (Gmel.) Temm. Pig. t. 55. — Columba leucophrys *Forst.* Desc. Anim. p. 168., Icon. ined. t. 136.
8. P. *tympanistria* (Temm.) Selby, Temm. Pig. t. 36., Le Vaill. Ois. d'Afr. t. 272.
9. P. *afra* (Linn.) Temm. Pig. t. 39. 38., Pl. enl. 160., Le Vaill. Ois. d'Afr. t. 271. — Columba chalcospilos *Wagl.*
10. P. *chalcospilos* (Wagl. ?).
11. P. *bronzina* (Rüpp.) Rüpp. Faun. Abyss. t. 23. f. 1.
12. P. *vinacea* (Temm.) Temm. Pig. t. 41. — Columba bicolor *Vieill.*
13. P. *mystacea* (Temm.) Temm. Pig. t. 56.
14. P. *cristata* (Lath.) Temm. Pig. t. 9.
15. P. *cuprea* (Wagl.) — Columba martinica *L.* Pl. enl. 162.
16. P. *castanea* (Wagl.) — Columba martinica var. β.
17. P. *boliviana* (D'Orb. & Lafr.) Mag. de Zool. 1836. Ois. t. 75.
18. P. ? *cruziana* (D'Orb.) Knip et Prev. Pig. t. 48.
19. P. *dominicensis* (Lath.) Pl. enl. 487., Temm. Pig. t. 51. — Columba annulata *Wagl.*

Ocyphaps *Gould.**

Bill moderate, strong, the apical half of each mandible vaulted and arched; the sides compressed; the nostrils lateral and longitudinal. *Wings* lengthened and pointed, with the third quill rather longer than the others, and narrowed for some length from the tip. *Tail* long, and rounded on the sides. *Tarsi* robust, nearly as long as the middle toe, and covered in front with transverse scales. *Toes* long, with the outer one longer than the inner, and margined on the sides by a membrane; the claws moderate and curved.

This elegant pigeon is an inhabitant of the interior parts of Australia. It seems to prefer marshy situations or the valleys which are covered with water at some part of the year. It frequently, observes Mr. Gould, assembles in very large flocks, and when it visits the lagoons or river sides for water, during the dry seasons, generally selects a single tree, or even a particular branch, on which to congregate in very great numbers, perching side by side, and all descending simultaneously to drink. It possesses great power of flight. The female forms its nest in a low tree; it is slightly composed of small twigs, in which are laid two eggs.

O. *lophotes* (Temm.) Gould, Pl. col. 142., Gould, B. of Austr. pl.

Petrophassa *Gould.*†

Bill slender and moderate, with the tip vaulted and slightly arched; the nostrils basal and lateral. *Wings* moderate, with the first quill shorter than the third; the fourth, fifth, and sixth nearly equal and longest. *Tail* long and much rounded. *Tarsi* robust and scutellated. *Toes* strong and moderately long, with the lateral ones nearly equal; the claws short, strong, and curved.

The type is an inhabitant of the most rugged, rocky, and sterile districts of the north-west coast of Australia.

P. *albipennis* Gould, Proc. Z. S. 1840. 173., B. of Austr. pl.

Chalcophaps *Gould.*‡

Bill slender, moderate, and straight, with the tip vaulted and rather arched; the nostrils lateral, membranous, and swollen, with the opening in the middle of bill. *Wings* long, with the second and

* Established by Mr. Gould in 1842 (*Proc. Zool. Soc.* p. 20.).
† Established by Mr. Gould (*Proc. Z. S.* 1840, p. 173.) in 1840.
‡ Established by Mr. Gould in his *Birds of Australia.* It is coequal with *Monornis* of Mr. Hodgson (1844).

third quills nearly equal, and longest. *Tail* moderate and much rounded. *Tarsi* rather shorter than the middle toe, robust, and covered with transverse scales. *Toes* long, with the lateral ones and the hind one nearly as long as the outer; the claws moderate and curved.

These showy birds are inhabitants of India, its archipelago, and Australia. They are generally seen solitary or in pairs on the ground, in the low shady jungles or brushes. When surprised, they endeavour to escape by a short but very rapid flight, and suddenly seeking the ground, there crouching until all their alarms are subsided.

1. C. *indica* (Linn.) Edwards's Birds, pl. 14. — Columba pileata *Scop.* Sonn. Voy. t. 66.; Columba cyanocephala *Gmel.*; Columba cyanopileata *Bonn.*; Columba albicapilla *Gmel.*; Columba griseocapilla *Bonn.*; Columba superciliaris *Wagl.*

2. C. *chrysochlora* (Wagl.) Pl. enl. 177. — Columba javanica *Temm.* Pig. t. 26.

Phaps *Selby.**

Bill lengthened, slender, and straight, with the tip vaulted and arched; the nostrils lateral, membranous, with the opening linear. *Wings* moderate and pointed, with the second and third quills longest. *Tail* long and rounded. *Tarsi* very short, shorter than the middle toe, robust, and covered with large scales. *Toes* long, strong, lateral toes unequal; the hind toe half the length of the middle toe.

These birds are scattered over the continent of Australia, they are mostly seen on the open sandy grounds or in the shrubs, where they live after the manner of partridges. Various kinds of seeds and berries, that are usually found on the ground, form the chief food of these birds. Their power of flight is merely employed for a short distance, to enable them to escape from danger. The nest is built of a few twigs, slightly put together, and placed on a trunk of a tree, or even on the ground. The female deposits two eggs.

1. P. *chalcoptera* (Lath.) Selby, Temm. Pig. t. 8., Gould, B. of Austr. pl.
2. P. *elegans* (Temm.) Selby, Temm. Pig. t. 22. — Columba Lawsonii *Sieber*, Gould, B. of Austr. pl.
3. P. *histrionica* Gould, Proc. Z. S. 1840. 114., Gould's B. of Austr. pl., Knip et Prev. Pig. t. 45.
4. P. *picata* (Lath.) Selby — Columba melanoleuca *Lath.* ex Lamb. Icon. ined. i. t. 62.; Columba armillaris *Temm.* Pig. t. 6.; Columba Jamiesoni *Quoy et Gaim.*; Type of Leucosarcia *Gould* (1843).
5. P. *leucotis* (Temm.) Pl col. 189.

Geophaps *Gould.*†

Bill moderate and strong, with the tips of both mandibles much vaulted and arched; the nostrils basal, lateral, and slightly gibbous, with the opening linear. *Wings* moderate, with the third, fourth, and fifth quills the longest. *Tail* moderate, and rounded on the sides. *Tarsi* very robust, as long as the middle toe, and covered with large scales in front. *Toes* moderate, with the outer toe shorter than the inner one, the sides of all margined with a membrane; the hind toe slender, and as long as the inner toe; the claws moderate and curved.

The birds that compose this division are only found in Australia; and Mr. Gould informs us that they live in pairs, or in small coveys of from four to six individuals, which, when approached, instead of seeking safety by flight, run off

* Established by Mr. Selby (*Nat. Libr.* v. *Pigeons*, p. 194.) in 1835. In 1837 Mr. Swainson transferred his name of *Peristera* to this division. It includes *Leucosarcia* (1843) of Mr. Gould.
† Established by Mr. Gould (*Proc. Z. S.* 1842, p. 19.) in 1842.

with exceeding rapidity in an opposite direction, and crouch down either on the bare plain, or among any scanty herbage that appears to offer the least shelter. They rise from the ground with extreme quickness, making a loud buzzing noise with their wings, and generally spinning off, not, as might be supposed, to another part of the plain, but to the horizontal branch of a large tree, on which they immediately squat down quite flat, in the same line with the branch; the flight is also like that of the partridge, and it also assimilates in the arrow-like direction of its course to the nearest tree, terminating with a skimming motion of the wings before alighting. Their chief food is the seeds of various grasses and other small plants, to which are added at some seasons insects and berries. The two eggs are deposited on the bare ground or in a small smoothed down tuft of grass, forming a slight hollow.

1. G. *Smithii* (Jard. & Selby) Gould, Jard. & Selby's Ill. Orn. pl. 104., Gould, B. of Austr. pl.
2. G. *scripta* (Temm.) Linn. Trans. xiii. 127., Pl. col. 187., Knip et Prev. Pig. t. 33. — Columba inscripta *Wagl.*
3. G. *plumifera* Gould, Proc. Z. S. 1842. 19., B. of Austr. pl.

Calænas.*

Bill strong, long, the apical half vaulted, much curved to the tip, and the sides compressed; the nostrils lateral, and near the middle of the bill. *Wings* long and pointed, with the third quill the longest. *Tail* moderate and nearly even. *Tarsi* very robust, rather longer than the middle toe, naked, and covered with large scales in front. *Toes* lengthened, strong; lateral ones nearly equal, and covered with transverse scales. The base of the upper mandible furnished with a wattle, and the feathers of the neck lengthened and pendulous.

These birds of the Indian archipelago, which are usually found on the ground, where they seek their food, run with great quickness, but they generally perch upon the lower branches of trees when they take rest. The nest is made upon the ground; and the female lays several eggs.

1. C. *nicobarica* (Linn.) Edwards's Birds, pl. 339., Le Vaill. Ois. d'Afr. 279., Pl. enl. 491., Temm. Pig. t. 2. — Columba gallus *Wagl.*
2. C. *Gouldiæ* (Gray) Gray, Ill. Ind. Zool. pl.
3. C.? *luzonica* (Scop.) Sonn. Voy. t. 20, 21. — Columba cruenta *Gmel.* Temm. Pig. t. 8.; Columba nivea *Scop.*; Columba sanguinea *Gmel.* Temm. Pig. t. 9.

Verrulia *Flem.*†

Bill slender. *Wings* long and rounded. *Tail* short and rounded. *Tarsi* moderate, naked, and covered with hexagonal scales. The base of the bill, a pendulous wattle under the throat, and a narrow and less pendulous band on the sides of the neck, naked.

The typical species of this division is only found in South Africa. The eggs, which are generally six to eight, are deposited upon a few twigs and stems of dried grasses, which are placed together in a hollow depression in the ground, and the hatching of these is the occupation of both sexes. The young immediately follow their parents, who keep them together by their peculiar cry, and they seek for them the larvæ of ants and insects, which form their first food. As they increase in size and age, they search like the adults for all sorts of grain, berries, insects, &c.

V. *carunculata* (Temm.) Flem. Le Vaill. Ois. d'Afr. t. 278., Temm. Pig. t. ii.

* This division was established by me in 1840 (*List of Genera*, &c. p. 59.).
† Dr. Fleming established this division (in his *Phil. of Zool.* ii. p. 232.) in 1822.

STARNÆNAS *Pr. Bonap.**

Bill slender, slightly vaulted at the tip; the nostrils lateral and longitudinal. *Wings* moderate and pointed. *Tail* moderate and rounded. *Tarsi* lengthened, longer than the middle toe, naked, and covered with small hexagonal scales.

This bird is peculiar to the West Indies, especially Cuba and Jamaica. It lives retired and solitary among the bushes upon the ground, where it seeks its food, and, when alarmed, runs with great rapidity in the manner of partridges. Its power of flight is very weak, and rarely employed. The nest is formed upon the ground, and the female usually lays several eggs. The young are said to follow the parent as soon as they are hatched.

1. S. *cyanocephala* (Linn.) Pr. Bonap. Pl. enl. 174., Le Vaill. Ois. d'Afr. t. 281., Temm. Pig. t. 3.
2. S. *melancholica* Tschudi, Faun. Peruana, p. 46.
3. S. *frenata* Tschudi, Weigm. Arch. 1843. 1. p. 386.

GOURA *Flem.*†

Bill moderate, slender, straight, slightly vaulted at the tip, with the base of the upper mandible covered with small plumes; nostrils placed in a lateral groove, membranous, with the opening oval and in the middle of the bill. *Wings* long and rounded, with the fourth, fifth, and sixth quills the longest. *Tail* long and rounded. *Tarsi* lengthened, much longer than the middle toe, naked, and covered with rounded scales. *Toes* short, the lateral ones unequal, with the hind toe long, and all of them covered above with transverse scales; the claws moderate, strong, and curved. The head ornamented with a large compressed crest.

These handsome birds are found in the large islands of the Indian archipelago and New Guinea. They live in the dense forests, and feed upon berries, seeds, grains, &c., which they seek for on the ground. The nest is formed upon a tree, and, like most of the species of pigeons, they lay but two eggs.

1. G. *coronata* (Lath.) Steph. Pl. enl. 118., Le Vaill. Ois. d'Afr. t. 280., Temm. Pig. t. 1. — Lophyrus indicus *Steph.*
2. G. *Steursii* (Temm.‡) — Lophyrus Victoria *Fra.* Proc. Z. S. 1844. p. 27.

* Established by the Prince of Canino in 1838 (*List of the Birds of Europe and N. Amer.*).

† This division was first established by Vieillot, in 1816, under the name of *Lophyrus*. This word having been employed in other branches of Natural History, it becomes necessary to adopt the above name from Dr. Fleming, who published it in 1822 (*Phil. of Zool.* p. 232.). In 1836 M. Kaup used *Megapelia*, and in 1837 Mr. Swainson proposed *Ptilophyrus*, which are synonymous.

‡ This name is used on the authority of M. Temminck, who informed me, on my late visit to Leyden, that he had so named and published the bird three years ago.

DIDUNCULUS
strigirostris (Jard.)

The fourth Subfamily,

DIDUNCULINÆ, or TOOTH-BILLED PIGEON,

have the Bill nearly as long as the head; with the culmen depressed close to the forehead, and then suddenly arched to the tip, which is hooked and acute; the sides slightly compressed; the lower mandible armed with three distinct angular teeth near the tip, which is truncated; the Nostrils pierced in the middle of the basal membranous space, with the opening oblique and linear: the Wings moderate and concave: the Tail rather short: the Tarsi moderate, and rather strong: the Toes rather long, and the lateral ones equal: the Claws long and curved.

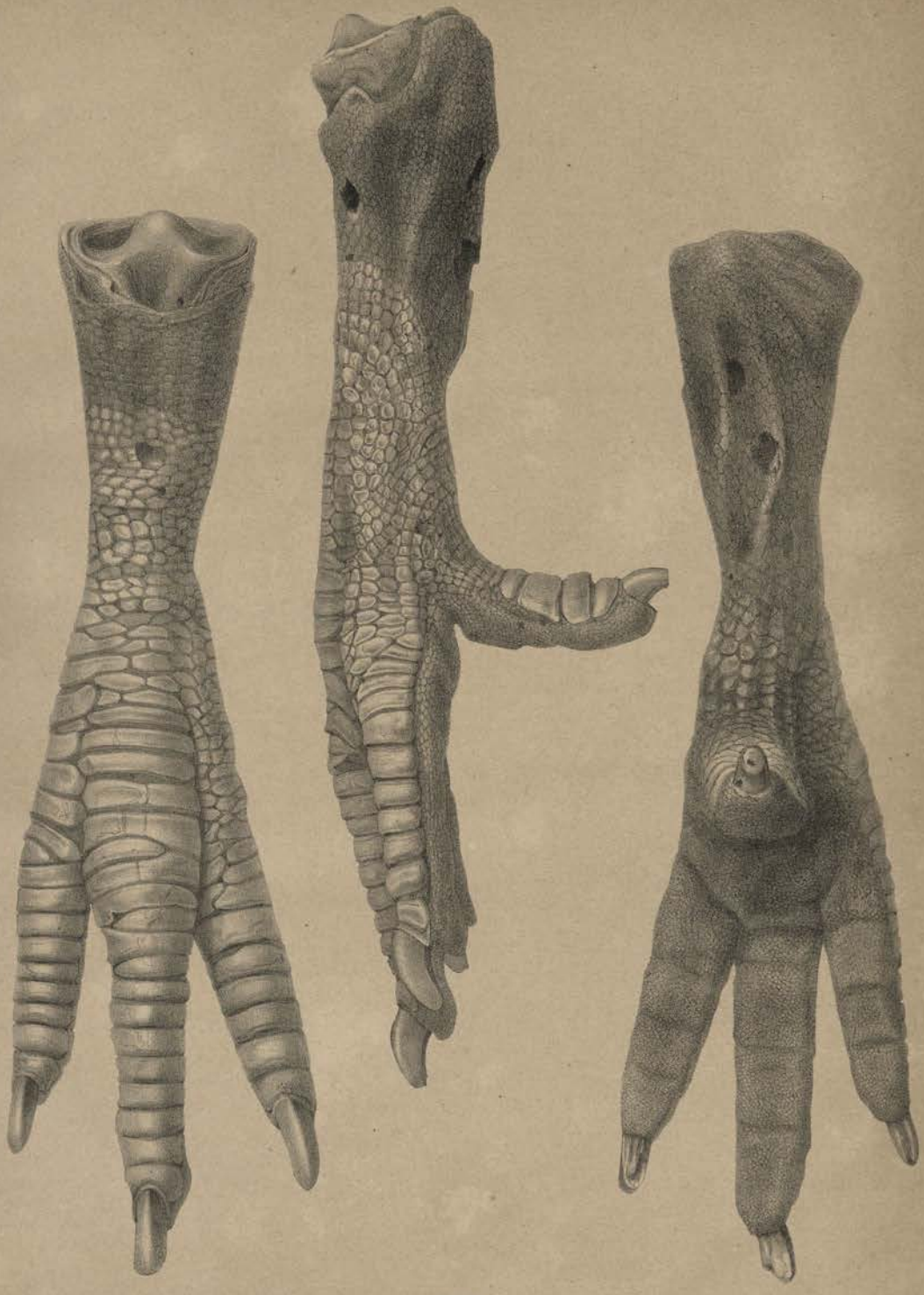
DIDUNCULUS *Peale.**

Bill strong, nearly as long as the head; with the culmen depressed for a very short space, from the forehead, and then suddenly rising and forming a prominent arch to the tip, which overlaps that of the lower mandible, and is very acute; the sides slightly compressed; the lower mandible strong, and furnished with three distinct angular teeth near the tip, which is truncated; the gonys short, and curved upwards; the nostrils placed in the middle of the membranous space of the upper mandible, with the opening linear and oblique. *Wings* reaching to the ends of the tail coverts, and concave; with the quills acuminated, and the second, third, and fourth nearly equal and longest; the bend of the wing is armed with a blunt tubercle. *Tail* moderate, and rounded on the sides. *Tarsi* as long as the middle toe, and the front appears to have been covered with small scales. *Toes* rather long, free at their base, and the lateral ones equal; the hind toe long; and the claws rather long, curved, and acute. The space round the eyes, and a small patch on each side of the throat, denuded of feathers.

The type of this genus inhabits the Samoan Islands in the Pacific Ocean. The Rev. J. B. Stair has kindly informed me that this curious-billed bird feeds on the roots of bulbous plants.

D. *strigirostris*. (Jard.) Gould, Ann. Nat. Hist. xvi. p. 175. pl. ix.; Gould, B. of Austr. v. 76. pl.

* Established by Mr. Titian Peale. *Gnathodon* of Sir W. Jardine (1845) and *Pleiodus* of M. Reichenbach (1847?) are synonymous.



DIDUS
ineptus
in Coll. Mus. Brit.

Printed by Hullmandel & Walton.

J. COLMAN TESTIMONIAL

Printed by Hullmandel & Walton

Jos. Dinkel del. et lith.

DIDUS ineptus.

1. From the head in the Ashmolean Museum of Oxford.
2. Restored principally from the Picture by Edwards in the British Museum.

The fifth Subfamily,

DIDINÆ, or DODO,*

have the Bill longer than the head; with the basal portion, for two thirds of its length, covered by a membrane, and the apical part corneous and vaulted, with the tip hooked and acute; the tip of the lower mandible overlapped by that of the upper mandible, and the gonys short and curved upwards; the Nostrils placed in the fore part of the membranous portion of the bill, and near the lateral margin, with the opening exposed: the Wings and Tail imperfect: the Tarsi short, robust, and covered with small irregular scales: the Toes moderate; the fore ones free at their base, and the lateral toes equal; the hind toe long and strong.

DIDUS *Linn.*†

Bill strong, and much longer than the head; with the culmen straight for some distance from the forehead, and then gradually arched to the tip, which overlaps that of the lower mandible, and is acute; the sides compressed; the lower mandible strong, with the gonys short, and suddenly curved upwards; the nostrils placed in the membranous portion (which occupies two thirds of the bill), near the apex and the lateral margin, with the opening oblique, exposed, and oval. *Wings* imperfect. *Tail* apparently consisting of a tuft of (five) curved broad feathers. *Tarsi* as long as the middle toe, robust, and covered with rather small irregular scales, lessening towards the knee joint, and a few at the base of the toes narrow and transverse. *Toes* moderate, broad, and transversely scaled above; the outer toe shorter than the inner, and the base of the anterior toes free; the hind toe rather long, on the same plane with the others, and covered above with transverse scales; the claws short, strong, and blunt.

This bird formerly inhabited the Island of Mauritius, where it is supposed by Mr. Strickland to have lived in the dense forests of palms and various other trees that once covered the island, "wandering from tree to tree, tearing with its powerful beak the fruits which strewed the ground, and digesting their stony kernels with its powerful gizzard, enjoying tranquillity and abundance until the arrival of man destroyed the balance of animal life and put a term to its existence." The nest is stated by the old voyagers to have been made of herbs or grass heaped together in the depth of the forest, and the female is said to have laid only a single egg at a time.

D. *ineptus* Linn. Edwards's Birds, pl. 294.

* I had formerly considered that this subfamily formed part of the order STRUTHIONIDÆ, but M. Reinhardt's idea of the type being *a pigeon* having been so ably proved by the careful investigation bestowed on the head and foot by H. E. Strickland, Esq., and Dr. Melville, I am now induced to place this remarkable subfamily among the COLUMBÆ.

† Established by Linnæus in 1766. *Raphus* of Mœhring (1752) is synonymous.

NOTE. — To this subfamily belongs Mr. Strickland's genus PEZOPHAPS, which is founded on the Solitaire, or *Didus solitarius* of Gmelin; but, as no recent portion of this bird is now known to exist, I have not inserted it in the general body of the work. Those readers who may require an account of this new genus had best refer to the elaborate work of Messrs. Strickland and Melville on the "Dodo and its Kindred," wherein they will find its history, as far as can be gathered from the old works, and also a lengthened description and figures of those bones that are at present known in collections.

December, 1848.

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